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PEDIATRICS

A Semi-Monthly Journal

DEVOTED TO THE STUDY OF

DISEASE IN INFANTS AND CHILDREN

DILLON BROWN, M.D.,
NEW YORK.

GEORGE CARPENTER, M.D.
LONDON.

VOLUME XII.

July 1st to December 15th,
1901

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254 West Fifty-Fourth Street, New York.

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PEDIATRICS

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Vol. XII. JULY 1st, 1901. No. 1

SOCIETY REPORTS

AMERICAN MEDICAL ASSOCIATION—SECTION ON DISEASES OF CHILDREN.

Held at St. Paul, Minn., June 4–7, 1901.

Samuel W. Kelley, M.D., of Cleveland, O., Chairman.

First Day, Tuesday, June 4.

Measles.—Dr. J. B. Garber, of Dunkirk, Ind., read a paper with this title. He pointed out that experiments and observations had demonstrated that the period of incubation of measles is between twelve and fourteen days; that no age was exempt from the disease, and that more than one attack in the same individual was common. A case was cited, occuring in his own practice, in which it was evident that the disease had been contracted at birth.

Dr. C. G. Slegle, of Minneapolis, also took the ground that one was never too old or too young to get measles. While he believed Koplik's sign to be pathognomic, in his experience it had been present only exceptionally; hence it had not proved of much service as an aid to diagnosis. He could not agree with the author regarding the frequency of a recurrence of measles, and felt sure that most of the cases of this kind that had been reported could be explained by errors in diagnosis, true measles being confounded with German measles or Rötheln

Dr. Clifton Scott, of Des Moines, said that he had unusually good opportunities for the study of measles, and as a result of this experience he was forced to differ with those who believe that persons of all ages are susceptible to the disease. He did not dispute the fact that very young infants may sometimes contract the disease, but it was not at all uncommon for children under one year of age not to develop the disease although exposed to it. He thought measles rarely appeared more than once in the same person. Rötheln should be distinguished from measles by the relative mildness of the catarrhal symptoms and by the presence of enlarged postauricular glands.

Dr. A. H. Brownell, of Oneonta, N.Y., said that he had himself attended a father, mother and two children in two characteristic attacks of measles, and had had the diagnosis confirmed by another physician, who, up to that time, had always maintained that measles only occurs once in the same person.

Dr. J. M. Postle, of Hinckley, Ill., reported a number of cases in which he had met with recurrence of measles. He also remarked that he had found suprarenal extract very useful in controlling the catarrhal symptoms.

Dr. Charles Douglas, of Detroit, pointed out that while measles is generally a trivial affection in private practice, causing death only rarely and then as a result of complications, it is attended by a high mortality in institutions, even without complications.

Dr. Barber, of Minneapolis, said that he noted the occurrence of a heart murmur and an endocarditis in children who had been allowed to get up too soon after measles.

Dr. Townsend, of New Lisbon, Wis., also emphasized the value of enlargement of the postauricular glands as a diagnostic sign.

Dr. Barber, in closing the discussion, reiterated the statement that recurrence of true measles was common and that it could not be explained on the theory that cases have been confounded with Rötheln.

The Pathology of Pertussis.—Dr. J. M. Postle, of Hinckley, Ill., read this paper. He was of the opinion that pertussis is a toxic neurosis, dependent upon certain bacteria, probably those described by Koplik and others, and that through the activity of these bacteria a toxin is set free which attacks by preference the nerve cells governing respiration. The result is powerful clonic spasm of the respiratory muscles but the resulting accumulation of carbonic acid in the blood leads to a destruction of the toxin. Acting on this theory, he selects remedies which powerfully stimulate the respiratory centre, notably strychnine, and pushes these up to the point of producing slightly toxic effects. He said that he was led to adopt this treatment after a severe siege with pertussis in his own family, and had been both astonished and gratified at the relief that had promptly followed the practical application of this theory. He had used this treatment in about fifty cases, extending over a period of three years, with a positively favorable result in each case, and many of his medical friends had an equally favorable experience. This medication would relieve the vomiting and would control the paroxysms of coughing for forty-eight hours after the remedy had been stopped.

Dr. SLEGLE said that this use of strychnine was old and he marveled at such heroic doses being given in a country practice because of the risk which it necessarily involved.

Antenatal Treatment of Hemophilia. Dr. J. W. BALLANTYNE, of Edinburgh, Scotland, sent a communication on this subject, in which he reported a case that pointed to the possibility of one's being able to beneficially influence the hemophiliac before its birth by administering to the mother during the period of gestation chloride of calcium. He did not, of course, claim that the proof afforded by this case was at all conclusive, but stated that a careful study of the details of this carefully recorded case afforded some grounds for believing that such might be the case.

A Perverted Palate.—Dr. ARTHUR H. BROWNELL, of Oneonta, N.Y., reported a remarkable case coming under his observation, in which an infant of ten months had developed a strange fondness for eating paint, wood and plaster, in spite of all that could be done to discourage such a practice. This material was vomited and passed by the rectum. After about one week, during which all sorts of cathartics failed to secure an evacuation of the bowels, the child had a convulsion and died. The autopsy failed to show any evidence of an inflammatory process or anything pointing directly to the cause of death. The bowel was almost completely empty, and there were three intussusceptions present, but the latter had apparently formed just prior to death.

Second Day—Wednesday, June 5th.

Symptoms and Course of Typhoid Fever.—Dr. J. P. Crozer Griffith, of Philadelphia, contributed this opening paper in the "Symposium on Typhoid Fever." He said that typhoid fever was certainly not a rare affection, though it was not ushered in with that degree of malaise observed in adults. Headache and loss of appetite were often all that the mother would notice; and hence, it was often only after several days of observation, and chiefly by a process of exclusion, that the diagnosis of typhoid fever in a child would be reached. The average duration was seventeen days, though abortive attacks were common. The typhoid roseola occurred about as often as in adults ,and the same was true of epistaxis. The temperature presented greater variations than in the adult,was prone to remain longer at the maximum elevation, and was rarely sc markedly remittent in the later stages. Vomiting was frequent and often troublesome. The nervous symptoms showed a tendency to predominate over the intestinal symptoms. A certain degree of apathy was common, and at times it was not easy to differentiate between typhoid fever and meningitis in children. Intestinal hemorrhage was almost never met with in very young children.and only rarely in children of eight or ten years. The mortality in children was nearly 5 per cent.

The Diagnosis of Typhoid Fever in the Laboratory.—Dr. John Lovett Morse, of Boston, Mass., sent a paper on this topic in which he stated that the chief laboratory tests for typhoid fever are: (1) The Widal reaction; (2) the examination of the urine and feces for typhoid bacilli; (3) the examination of the blood or of the rose spots for these organisms; (4) the diazo reaction in the urine; and (5) the leucocyte count. Although the Widal reaction was present in 95 per cent.of the cases it was rarely observed before the second week, while in some cases it was only present intermittently. For this reason repeated negative Widal reactions were not sufficient to positively establish the presence of typhoid. Again, the fact that the reaction might be obtained as long as twenty-one years after an attack of typhoid tended to vitiate the result. The most positive evidence was afforded bv a positive following a negative Widal reaction with a dilution of 1 in 50. This test was less significant in infancy than in later life because the agglutinating power may be transmitted from the mother to the fetus through the placenta, or may be transmitted to the offspring through the breast-milk for years. Typhoid bacilli could be found in the urine in 25 to 30 per cent. of the cases but the isolation of the bacilli was tedious and difficult, and could only be done by experts. The same criticism applied to the isolation of the specific bacilli from the blood, although possible in about 80 per cent. of the cases. The diazo reaction, occurring as it did quite early in the disease, would prove very useful were it not that it is found in several other diseases liable to be confounded with typhoid. The leucocyte count was usually subnormal throughout the course of typhoid, averaging 5,000 per ccm. The test was therefore chiefly of value in differentiating between typhoid and some other disease characterized by leucocytosis; as, for example, septicemia. The occurrence of leucocytosis in the course of a typhoid indicated the presence of some complication, often an impending perforation of the bowel. The Widal reaction and the leucocyte count should be considered the laboratory of the greatest practical value in connection with the recognition of typhoid.

The Treatment of Temperature by Drugs.—Dr. Edwin Rosenthal, of Philadelphia, read this paper. In it he described certain observations that he had made regarding the effect of various drugs on the temperature. All of them, including the coal-tar derivatives, had proved disappointing and he had abandoned them in favor of the old "neutral mixture" of the pharmacopeia. These experimental observations were detailed as a matter of record chiefly, for personally he preferred tub baths or sponge baths to control a dangerous degree of hyperpyrexia.

A Case of Multiple Gangrene Associated with Cholangitis and Adenoma of the Liver, Complicating Typhoid Fever.—Dr. Isaac A. Abt, of Chicago, reported this case, which occurred in an infant of 21 months. The father had typhoid at the same time, and the child's blood gave a positive Widal reaction. A pecular eruption began on the head, back and extremities, first as papules but later as pustules, and then there developed areas of gangrene. These were apparently the result of a multiple embolic process. The author said that this variety of gangrene had been described in connection with varicella as "varicella gangrenosa," and also as a complication of other affections. The autopsy revealed an adenoma of the liver and a catarrhal cholangitis.

Dr. Victor C. Vaughan, of Ann Arbor, Mich., opened the general discussion. He thought the relative infrequency of typhoid in children could be explained by their not being so apt to drink water from all sorts of places as adults. The mild or abortive attacks were probably explicable on the theory that a mixed infection having occurred, an irritative diarrhea is set up and this causes the elimination of most of the typhoid bacilli. The statistics of Hamburg give a death rate of 7.5 per cent., and those which he had himself collected from the hospitals in this country gave a mortality between 8 and 9 per cent. On the other hand, the statistics of the Health Department of New York City gave the death rate as 29 per cent and those of Philadelphia as 13 per cent. Such discrepancies could only be explained by a failure on the part of the physicians of New York City to recognize and report many cases of typhoid. He had collected 20,000 cases of typhoid occurring in this country in private practice, and these had given a mortality of about 16 per cent.

Dr. CHARLES DOUGLAS, of Detroit, said that he paid great attention to the dietary of typhoid patients, having seen them made worse by overfeeding as well as by the improper selection of the food. His main reliance was upon milk, broths and white of egg, and his rule was never to give more than 1 pint for every 50 pounds of body weight.

Dr. T. F. WOOD, of Angola, Ind., took the same view regarding the danger of overfeeding. He urged that water be given freely and that the bowels be kept slightly relaxed.

Dr. BARBER, of Minneapolis, referred to an epidemic of typhoid which had broken out in his city at a time when the river was low and full of ice. During the first part of this epidemic the cases had been very severe but later on, when the heavy rains had raised the level of the river, fully 60 per cent. of the cases were "walking typhoids." He raised the interesting question as to whether this change of type was the result of dilution of the infected river water or of an actual diminution in the virulence of the bacilli.

Dr. JOHNSTON, of Grand Rapids, Mich., spoke in advocacy of the bath treatment of typhoid, and added that the physicians in his vicinity after an experience of ten years with this method of treatment felt that they had demonstrated conclusively its adaptability even to country practice.

Dr. GEORGE D. HEAD, of Minneapolis, said that while the Widal reaction often appeared too late to be of practical value in the diagnosis of typhoid in children, this could not be said of the leucocyte count, which was often an early and most reliable guide.

Prolonged Intubations.—Dr. EDWIN ROSENTHAL, of Philadelphia, read a paper with this title. He divided the causes of prolonged intubation into: (1) The type of the disease; (2) the result or sequel of the disease, and (3) the wearing of the tube. The most frequent cause by far was the second, i.e., diphtheritic paralysis, though he felt that the too free use of irritating solutions, such as hydrogen dioxide in cleansing the tube, was another important etiological factor. All so-called solvents of the membrane should be avoided.

Dr. B. R. Shurley, of Detroit, designated as prolonged intubations those in which the tube was retained longer than the sixth day. It was his practice to remove the tube on the fourth day or even earlier and this was ordinarily quite feasible if a dose of 3,000 units of antitoxin had been given early. Traumatism, either inflicted by bungling efforts at intubation or by the wearing of an ill-fitting tube, was the chief cause of these cases of prolonged intubation. He objected to plated tubes on the ground that the plating was apt to wear off in spots and these spots would then become encrusted with calcareous matter and would then cause injury to the mucous membrane of the larynx.

Dr. Golden, of Chicago, said that in a few cases in which he had administered suprarenal extract internally there had been such prompt subsidence of the edema and of the urgent symptoms of laryngeal stenosis that the parents had withdrawn their consent to the performance of intubation. In these cases he had given 2 grains of the extract every three hours.

Dr. I. A. Abt, of Chicago, advocated removing the intubation tube after twenty-four hours and then reintubating thereafter daily. He was one of those who believe that occasionally intubation is impossible. In support of this view he narrated one case in which it could not be performed even after death.

Dr. Rosenthal said that while he made use of plated tubes it was his rule to have them freshly plated after each introduction into the larynx.

Prevention cf Pulmonary Tuberculosis in Predisposed Children.—Dr. John A. Robison, of Chicago, presented this paper. He argued that heredity should receive more consideration because it was demonstrated to be a factor in at least 36 per cent. of all cases. The offspring of tuberculous parents are easily infected and hence the family physician should aim to keep the nutrition of such children at the highest possible standard. These infants should not be nursed by their mothers but should be wet nursed or else fed on food known to be free from the tubercle bacillus. It was also wise to encourage them to acquire a taste for fats and the common juvenile inclination to eat sweets should not be too rigidly curbed. He thought candy was rather beneficial if given after and not between meals. The period of puberty was a critical one, and the present custom of enforcing ignorance of sexual laws led to a great deal of harm. The methods of our public schools were responsible for wrecking many a feeble constitution. After the education had been secured the selection of a vocation became a matter for serious consideration. Work in crowded, dusty and ill-ventilated places should be avoided, and if possible, an occupation secured that would require an active life in the open air. Persons predisposed to tuberculosis should be warmly but not excessively clothed and this clothing should be loose so as not to interfere with the movements of the body, particularly of the lungs. Corsets should be placed under the ban. The parents of these children should be warned of the special dangers to their offspring of attacks of measles and pertussis and of the evils resulting from neglect to attend to enlarged tonsils and pharyngeal adenoids.

Dr. T. F. Wood, of Angola, Ind., remarked that the author had unfortunately omitted a consideration of an important and fundamental cause, i.e., the lack of proper restrictions on the marriage of tuberculous individuals.

Dr. Work, of Elkhart, Ind., suggested that of equal importance with the question of the kind and quantity of clothing to be worn was the insistence that the clothing shall be changed to conform with the sudden fluctuations in the weather.

Dr. Slegle, of Minneapolis, recalled the great stress that Professor Flint, Sr., used to lay on the need for tuberculous individuals to eat freely of fats and his statement that these persons almost always exhibit an aversion to fats.

Dr. Johnston, of Grand Rapids, said that it had been shown that 98 per cent. of the human race living to the age of thirty exhibit post-mortem lesions of tuberculosis, thus proving that almost everyone becomes infected with this disease at some time. He pointed with much pride to the pioneer work of the Michigan State Board of Health and asserted that as a result of their work in this field during the past eight years the death rate from pulmonary tuberculosis in that State had been reduced from 120 to 90 per 10,000 of the population.

Dr. Kelsey, of Minneapolis, suggested that some of this lowering of the death rate should be credited to advances made in hygiene during these years.

Protracted Influenzal Pneumonia in Children.—Dr. F. X. Walls, of Chicago, presented this paper. In it he reported four clinical cases and called attention to the distinguishing features, i.e., the sudden onset, the high fever and the marked daily fluctuations in temperature. Of the two cases that recovered one lasted twenty-five and the other forty-one days. These cases should not be isolated.

Dr. I. A. Abt, of Chicago, said that the greatest difficulty he had experienced in these cases had been in differentiating them from an empyema with a limited quantity of fluid.

Congenital Malformations, with Roentgen Ray Demonstrations.—Dr. Carl Beck, of New York City, illustrated his remarks on this subject by the exhibition of numerous photographs and radiographs.

Membranous Colitis in Infants.—Dr. Charles Douglas, of Detroit, presented a paper on this subject. He said that this affection was characterized by the sudden appearance of vomiting, high fever, severe pain and frequent stools containing mucous, some blood and characteristic yellowish opaque masses of membrane. The disease is rare in infants under six months. Recovery usually takes place in eight or ten days.

A Case of Ureteral Calculus in a Boy of Ten.—Dr. W. W. Keen, of Philadelphia, reported this case, and presented an excellent skiagraph of the same. There was a history of attacks of nephritic colic since the age of two years. The radiograph showed the calculus to be situated a little below the pelvic brim, in the left ureter, and here it was found and removed by operation on October 2, 1900.

Dr. Charles L. Leonard, of Philadelphia, who had made the skiagraph of this case, stated that he had used this method in forty-seven cases of renal or ureteral calculi, and in 50 per cent. of these the calculus had been found lodged in the ureter. One advantage of the method was that it sometimes afforded a justification for postponing operation to see if a small calculus might not be evacuated spontaneously.

Third Day—Thursday, June 6th.

Diabetes Mellitus in Children.—Dr. A. C. Cotton, of Chicago, presented a paper on this topic and reported a case. He did not believe there was any distinct casual relation between this disease and the acute infectious diseases of childhood, but was of the opinion that heredity plays an important part. These children all present a picture of extreme malnutrition, and rarely survive more than a few months. Drugs were of but little value, except perhaps opium. The treatment was almost wholly prophylactic, and consisted in guarding the children predisposed to this disease from nervous shock, from traumatism, and from indiscretions in diet. It was especially important to protect them from sudden reduction of body temperature.

Albuminuria in Disease of the Kidneys in Infancy and Childhood.—Dr. JOHN R. RATHMEL, of Chattanooga, Tenn., presented this paper. After speaking of the different forms of albuminuria he briefly discussed the treatment of renal disease, and advocated a milk diet, and the use of the hot wet pack. Digitalis was often useful, as were also cathartics where there was much edema.

Congenital Cystic Kidney.—Dr. WILLIAM JEPSON, of Sioux City, Iowa, reported an interesting case of this kind, and exhibited the specimen. The special features were the involvement of only one kidney, the absence of disturbance until the cyst was of such a size as to exert considerable pressure, the difficulty experienced in making the diagnosis even after performing abdominal section, and the fact that this is the youngest patient known to have recovered after nephrectomy.

Gonorrhea in Boys.—Dr. A. L. WOLBARST, of New York City, sent a communication on this subject. He said that he had seen gonorrhea in male infants varying in age all the way from eighteen months to twelve years, and in girls of ten and twelve years. Contrary to the usual belief most of these cases had become infected through sexual relations. The mode of life of our tenement dwellers accounted for this sexual precocity. Many cases, of course, develop because of the widely prevalent superstition among the ignorant and vicious that an adult may rid himself or herself of the disease by giving it to a child. These children usually suffer far more than one would expect from the appearance of the parts, and this was often to be explained by the presence of a tight prepuce. When the prostate became involved there was intense pain on defecation. The disease usually lasts from four to six weeks. The first essential to successful treatment was perfect cleanliness. Where the child had been circumcised, the use of warm water or of a solution of boric acid would secure this, but where the prepuce was tight or long, the washing should be done with a small glass syringe inserted between the prepuce and glans for anterior urethritis it was recommended to inject into the urethra three times daily a half-per-cent.

solution of protargol, and for posterior urethritis the irrigation of the urethra with a 1 to 6,000 solution of permanganate of potassium, using a small soft catheter or a small glass syringe. It was also well to administer internally the pure oil of wintergreen in doses of five or ten minims. Epididymitis should be treated by the application of a 10 per cent. guaiacol ointment.

The paper was quite fully discussed, and the author's statements concerning the origin and prevalence of gonorrhea in children were fully corroborated.

The Prevention of Infection in Babes Born of Tuberculous Parents.—Dr. Clifton Scott, of Des Moines, Iowa, presented the report of two cases.

The Introduction and Management of School Hygiene—Dr. Leigh K. Baker, of Cleveland, O., presented a general plan of organization, and thus opened a symposium on school hygiene.

Physical Culture in Children, and the Objects to be Attained.—Dr. John Madison Taylor, of Philadelphia, sent this paper. He said that the shoulders should be let alone, but the back should be kept straight and the abdomen in. The pelvis should also be kept as nearly level as possible.

The Pubescent School Girl.—Dr. William E. Darnall, of Atlantic City, N. J., presented this suggestive paper. He spoke of the harm accruing from our present high pressure methods of school instruction, and the way in which the young girl's physique is injured by long hours of study and training in various accomplishments, to the banishment of much needed recreation and freedom in the open air.

Diagnosis of the Backward Child.—Dr. A. W. Wilmarth, of Chippewa Falls, Wis., was the author of this paper. He spoke of the impossibility of drawing sharp lines between the normal and the backward child, and argued for the establishment of special schools for backward children.

Speech as a Factor in the Diagnosis of the Backward Child.—Dr. G. Hudson Makuen, of Philadelphia, discussed this phase of the subject. He said that backwardness was not always due to a central lesion, but might be the result of an arrest of development or some abnormality of the peripheral organs, notably of the organs of speech. Before making a prognosis it was his practice to ascertain by careful study and experiment to what extent the child was capable of training in the refinements of speech.

A Plea for the Backward Child.—Dr. C. F. Wahrer, of Fort Madison, Iowa insisted that our effort should be to discover and guide, not to condemn the backward child. Encouragement was to be derived from what history teaches, i. e., that many of the most celebrated geniuses were considered dull and stupid in childhood.

Some of the Considerations Regarding the Medical Criticisms of the Hygiene of Early Life.—Dr. J. Noer, of Stoughton, Wis., read a paper with this title, in which he showed that teachers and medical advisers had each their proper sphere, and that each could usefully supplement, but could not supplant, the work of the other.

Officers Elected.—Dr. H. F. McClanahan, of Omaha, President; Dr. Frank X. Walls, of Chicago, Secretary.

"We may, I think, sum up the present knowledge of the cause of dysentery in the following way:

"1. No bacterial species yet described as the cause of dysentery has an especial claim to be regarded as the chief micro-organism concerned with the disease.

"2. It is unlikely that any bacterial species that is constantly and normally present in the intestine or in the environs of man, except where the disease prevails in an epidemic form, can be regarded as a probable cause of epidemic dysentery.

"3. The relations of sporadic to epidemic dysentery are so remote that it is improbable that the two diseases are produced by the same organic cause.

"4. The pathogenic action of the ameba coli in many cases of tropical and in certain examples of sporadic dysentery has not been disproved by the discovery of amebæ in the normal intestine, and in diseases other than dysentery. While amebæ are commonly present and are concerned in the production of the lesions of subacute and chronic dysentery, they have not thus far been shown to be equally connected with the acute dysenteries even in the tropics.—S. F. Exner, *Jour. A. M. A.*, January, 1901.

STRICTURE OF THE ESOPHAGUS FOLLOWING TYPHOID FEVER.*

By W. O. Roberts, M.D.,
Professor of Surgery and Clinical Surgery in the University of Louisville (Medical Department), etc., Louisville, Ky.

THIS boy was sent to me from Daviess County, Kentucky. He is 15 years of age, and had an attack of typhoid fever last November, from which he was laid up nine weeks and wasted away to a mere skeleton. During this time he lived, of course, exclusively on liquid food.

Just before he got up, in attempting to swallow a capsule of quinine, he became choked, and it was some little time before he could get it down. Since then he has been unable to swallow anything solid whatsoever.

He had gotten along very well as far as liquid food is concerned until about ten days ago when he became unable to swallow anything, and was sent here with the view of having something done for his relief. I have been using a bougie, but have not yet been able to get into the stomach even with the smallest size. I can pass it down about 12 inches, but hardly think it enters the stomach. The stricture is located about the cardiac orifice.

When he came here he was unable to swallow water or anything else; after using the bougie he was able to drink milk. I used the bougie one afternoon and again the next day, and that day, after the second introduction, he was unable to swallow anything until the next morning.

He has been given beef tea by rectal injection; he was taking that before he came here, but since he has been able to swallow, this form of feeding has been discontinued.

This is the third case of stricture of the esophagus following typhoid fever that has come under my observation. The first was in the person of a medical student who wasted away and died. He came here with the view of having something done, but went away without giving his consent to a gastrotomy. The other case was in a young woman which terminated in the same way. No operation was performed in either case, though it was strongly advised, and both patients died.

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* Abstracted from Proceedings of the Louisville Medico-Chirurgical Society.

DISCUSSION.

Dr. L. S. McMurtry.—A year ago last summer Doctor Roberts and myself were in New York together, and leaving him one day I went over to Philadelphia and spent the next forenoon with Dr. Price. That day he operated upon a lieutenant in the army, who had been in the campaign in Cuba and had typhoid fever for 100 days, having the worst type of the disease with hemorrhage from various mucous membranes. He had a stricture of the esophagus about 11 inches down, nearly the same as this boy has. I stood opposite Dr. Price when he operated; he did a gastrotomy, and after opening the stomach he dilated the stricture easily with his finger and then had an assistant pass the largest bougie down, which passed through the stricture with ease. After dilating the stricture thoroughly with his finger he closed the stomach and the abdomen. The patient was greatly emaciated; he began to eat in a few days; his nourishment was well borne; his nutrition improved, and seven months afterward Doctor Price told me that the result was satisfactory.

As to the cause of these strictures, as far as I know they occur from ulceration.

Dr. John G. Cecil.—It is rather curious that we should have this amount of ulceration resulting in stricture, and yet there has been no evidence of it during the course of the fever. We expect ulceration of the bowel in all cases of typhoid fever but it is remarkable that in such cases we seldom have stricture of the bowel as a result of the ulceration.

I should say that the procedure mentioned by Doctor McMurtry ought to be followed in every case like this, and I hope Dr. Roberts will have the opportunity of treating the patient in this way and make us a further report.

Dr. W. O. Roberts.—This boy complained of catarrhal symptoms for a long time previous to the attack of typhoid fever, but just what the condition of his nose and throat was I do not know. Doctor Lederman examined him a few days ago and found a perforation of the nasal septum, which he tells me is not unusual as a sequel of typhoid fever.

Dr. B. C. Frazier.—I would like to ask Doctor Roberts how soon after convalescence from typhoid fever in this case the stricture appeared.

Dr. W. O. Roberts.—It was nine weeks after the onset of typhoid fever that the stricture was first observed. The other two cases mentioned were bedridden when I first saw them. I was unable to introduce the smallest bougie in the other two cases.

Dr. William Cheatham.—In typhoid fever the nose often becomes dry, crusts form and the patient picks these, which results in infection and suppuration with ulceration and perforation of the nasal septum.

There is no doubt that the stricture in the case reported is the result of ulceration, and the procedure outlined by Dr. McMurtry would seem to be the proper one. If the doctor is afraid to use the knife, the stricture could be cut with a thread passed from below upward, without danger of injury to the normal tissue. By this method there would also be less likelihood of hemorrhage.

The esophagoscope is sometimes used to demonstrate these strictures, which can be easily done. I remember a case where the surgeon is about to perform esophagotomy in a boy who had swallowed concentrated lye and had a stricture; he had been eating plums and it was thought a seed lodged in the esophagus. I had no trouble in demonstrating with the esophagoscope that there was no foreign body, that it was simply a stricture with spasm; after the boy had been given chloroform he never had any further trouble in swallowing.

Dr. F. C. Wilson.—Several years ago a patient was sent to me with a stricture of the esophagus following typhoid fever. I succeeded in passing a small bougie and gradually dilated the stricture. Dilatation was complete and the patient returned home and has remained in good condition since. This process of dilatation extended over a period of three or four weeks.

Dr. T. C. Evans.—Two cases of traumatic stricture of the esophagus have come under my observation within the last few years, both of which were treated by gastrotomy, with no attempt to dilate the stricture. Traumatic strictures of the esophagus seem to be different from strictures of other viscera in that nature takes care of them. In these two cases gastrotomy afforded nourishment to the children, and with no treatment directed toward the esophagus within a year after the gastrotomy they were able to swallow and the wounds were closed.

I do not know whether this boy is too old to permit this method of treatment or whether strictures, the result of typhoid fever, would come under this heading; but traumatic strictures of the esophagus are relieved by natural processes if we can keep the patient alive for a sufficient length of time.

Dr. W. O. Roberts.—I wanted to see whether the members of the society would agree in the opinion I had already formed, that this was a case for gastrotomy with dilatation of the stricture from below. I brought the patient here to get an expression of opinion upon that subject. It seems to me this should be the method of procedure.

MORTALITY AMONG PARISIAN PHYSICIAN.

The statistics concerning the number of deaths of the medical body in Paris are published every three months, and they tend to show that a large proportion of them are due to diseases contracted in the profession. Out of 71 deaths 38 are due to consumption and kindred affections. Out of 14 physicians 3 died of diabetes and two committed suicide; one died from morphinomania.—*Jour. A.M.A.*

EDITORIAL COMMENTS.

St. Paul Meeting of the American Medical Association.

It is gratifying to note the unanimity of approval with which the last meeting of the American Medical Association has met. Editors of Medical Journals from all parts of the country declare with the conviction of personal experience that the scientific work was of a high order, the social enjoyments of the delegates were most commendable, and the changes made in the legislative government of this great body of professional men all in the line of progress. The number of registrations (1806) was not quite so great as at the meeting of last year in Atlantic City, but in all other regards the meeting itself and the work *in toto* were more successful and instructive than ever before.

"Natural Method of Teaching the Subject of Medicine."

An article on this subject by Dr. William Osler, appeared recently in the Journal of the American Medical Association. It is so well abreast of the best educational thought of the time, and so characteristic of Dr. Osler himself that there would be no small pleasure for us, and no small profit, we feel sure, for our readers, in abstracting the matter of it at some length. We must be content, however, for lack of space, with a brief notice. The essential note of the essay is that the student must get his information and experience at *first hand*—namely by studying the course and results of disease in the patient himself. This leads the writer to an extended and valuable description of the four years' medical courses at the Johns Hopkins University, which have been planned upon these lines. The demonstration is complete that the "natural method" of teaching medicine is the only one justifiable upon scientific grounds, and producing the broadness of view and habits of observation that make the true physician. B.

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting December 11, 1900.

President, Dr. Alfred Stengel, in the chair.

Drs. Charles H. Frazier and A. L. Newhall exhibited a patient upon whom a plastic operation had been performed to repair a defect upon the palmar surface of the hand. The patient was a colored boy, ten years of age, whose left hand had been severely burned two years ago. The contractures of the cicatrix had caused no little disability. The thumb was so adducted and the fingers so flexed that the patient could not open his hand to grasp an object. Furthermore, the development of the affected hand had evidently been partially arrested by the cicatrix as the unaffected hand was already very much larger.

The first step of the operation consisted in excising the cicatrix; its removal left a defect. Rather than resort to skin grafting or to the use of a pedicled flap from the chest or abdomen, the following plan was executed: Two parallel incisions 1½ inches apart, and as long as the width of the palm, were made over the buttock through the skin and subcutaneous fat. The tissue between the parallel incisions was dissected free from the underlying structures, thus a flap was fashioned, two sides of which were free and two attached. The hand was pronated and slipped in under the flap in such a way that the raw surface in the palm of the hand was in perfect apposition with the under surface of the flap. Sutures were introduced approximating the edges of the defect to the edges of the flap. A heavy plaster dressing including the trunk was applied in order to immobilize the parts and ensure absolute rest. The wound was dressed at the end of the first week, and at the end of the second, or on the fourteenth day, the hitherto unattached sides of the flap were severed and the edges united by sutures to the corresponding sides of the defect. At present the child can completely flex and extend the fingers and thumb so that the results may be said to be in every way satisfactory. There is a considerable pad of adipose tissue in the flap, which in no way interferes with motion and will no doubt in course of time become absorbed.

Dr. C. F. Judson exhibited a case of spastic paraplegia following traumatism, which occurred in a child five years of age. The father had died of diabetes, and the six other children in the family had begun to walk only when about two years old, otherwise the family history was entirely without interest. There was an absence of any family history of paralysis early in life. This child had had some infantile atrophy but had recovered from it, and had begun to walk when eighteen months old. It had had typhoid fever, measles and chicken pox some years before, but never had convulsions. In January, 1900, while standing on a chair, the child fell to the floor and became unconscious and remained so for ten minutes. There was general muscular rigidity and dilatation of the pupils, according to the mother's statement. There was no evidence of any injury to the head, and no visible hemorrhage from the scalp, eyes, ears or mouth. The child recovered after a few months and seemed perfectly well throughout the remainder of the evening. Speech was wholly unaffected. The next day it was well excepting for some clumsiness in the leg movements; this increased slowly, and five months later there was said to have been distinct rigidity of the legs. By September the gait had become decidedly spastic, and in October, when admitted to the hospital, the child could not walk or stand unassisted. The muscles were well preserved and vigorous. Co-ordination, the sense of locality, muscular sense and heat and cold sense were good; the tactile sense was at first below par, and the pain sense delayed, but upon recent examination both these senses seemed normal. There was no involvement of the bladder or rectum and the electrical reactions were normal. The mental condition was unaffected. There was no distinct evidence of rickets, and the child was well nourished. It was considered to be a degeneration of the lateral pyramidal tracts following traumatism since there was no evidence of injury to or disease of the vertebral column. Since there was at one time some sensory disturbance it was believed to be probable that there was a transverse myelitis following either slight fracture, dislocation, or a punctiform hemorrhage into the thoracic arch of the cord.

Dr. Griffith.—In spite of the fact that it has been carefully looked for I cannot get rid of the thought that there is possibly Pott's disease present. The child has the symptoms of compression myelitis, and the fact that it has grown better is suggestive of the compression being due possibly to Pott's disease which is improving. It would be interesting to know whether there are any reactions of degeneration. It is not at all impossible that it is due to a chronic meningitis.

Dr. Judson.—The electric reactions have been taken, and there are no reactions of degeneration present. I think Pott's disease has so far as possible been excluded. There are absolutely no sensory symptoms now, and there have been none at any time excepting a doubtful reduction of the tactile and pain senses upon admission to the hospital. There are no points of tenderness along the back; pressure upon the spine, tapping over the spine, and the passage of very hot objects along the spine cause absolutely no distress. There is no deformity of any kind, and the child can jump to the ground without pain, and all other tests for the presence of Pott's disease are entirely negative.

Dr. Alfred Stengel exhibited four cases of acute anterior poliomyelitis in young children between the ages of eighteen months and two years. The cases were of interest because of the fact that the paralysis had from the beginning been of very limited extent. There was possibly an exception to this in one case. Entire limitation to one limb in the early stages is unusual. After some time has passed it is not uncommon to find the paralysis practically limited to one member, but there is usually in the early stages more or less involvement of some of the other limbs. Three of the children showed paralysis of one leg, the other paralysis of the left shoulder, arm and forearm alone. The latter case at first sight suggested Erb's upper arm paralysis, but this was soon excluded by the discovery that the lower arm was quite as much affected as the upper. There was severe atrophy of the deltoid muscle, and marked atrophy of the upper and lower arm muscles, with some wasting of the pectorals. The deltoid and the muscles of the upper and lower arm showed no reaction even to the strongest Faradic current. Another case was of a good deal of interest, because while the right leg was paralyzed and flaccid there was some rigidity in the left leg, and pain upon movement of this member. The knee jerk on the right was entirely absent and that on the left was much reduced. All the children had given a history of the usual onset of anterior poliomyelitis, with fever, gastric disturbance, and symptoms of a general infection. The course of the disease had been marked by complete palsy of the affected parts and entire absence of sensory symptoms. In discussing the cases with Dr. Spiller and other neurologists it was noted that all had recently seen a large number of cases of anterior poliomyelitis, and it was suggested by Dr. Spiller that perhaps the disease is now endemic in Philadelphia.

Dr. Peters.—I have recently seen a case in St. Christopher's Hospital that reminds me of one of Dr. Stengel's cases. The child's left leg was injured and paralysis came on immediately after the injury, without fever, vomiting, or other general disturbance; it was thought probable the family physician that the case was one of injury to the great sciatic nerve. The condition of the child now, however, is typical of acute anterior poliomyelitis. It exhibits marked atrophy of the muscles of the left leg and complete palsy. In connection with the suggestion that the disease is now endemic I would say that I have recently had an unusually large number of cases under my care at St. Christopher's and Medico-cherurgical Hospitals.

Dr. Westcott.—The suggestion that acute anterior poliomyelitis may be endemic at the present time reminds me that I saw recently in my service at the Methodist Hospital a typical case of this affection in a young man of twenty years of age.

Dr. J. P. Cuzon Griffith exhibited a case of gyrospasmns.

Dr. Eshner.—I quite agree with Dr. Griffith in the statement that those cases are not common, but I think that they are hardly so rare as his remarks would indicate. In the outpatient service at the Orthopedic Hospital we see several cases each year. I think that examination of the records of these cases would show that rickets was always noted as present, also the disease is practically never seen after the second year. The first two years of life are those in which active rickets is most commonly seen, and it is probable that the disease is closely related to rickets, or at any rate dependent upon some marked nutritional disturbance.

Dr. D. J. M. Miller.—Some time ago I reported three cases of this affection myself, and in going over the literature collected altogether 78 cases. In the first place I would direct attention to the fact that the name "nodding" spasm is an incorrect one, since the movements are not spasmodic but are usually distinctly rhythmic. As to the etiology, there is practically always some distinct nutritional disturbance, and most commonly this is rickets; 50 per cent. of the 78 cases showed distinct signs of rickets. There is often also a history of a recent attack of illness; measles particularly is noted as having preceded the attack in 7 cases, one of them being one of my own cases. Henoch thought that there was a close relation between this affection and the eruption of the teeth, and it is worthy of note that 67 of the 78 cases occurred between the sixth and eighteenth months of life, the period during which most of the teeth appear. The effect of teething, however, is probably only a predisposing one. Raudnitz has particularly directed attention to the fact that nystagmus is seen in all cases at some time during their course. The course is always favorable, being as a rule, two or three months in duration, after which time the "nodding" spontaneously ceases. Raudnitz investigated the homes of many of his cases and found that the houses were poorly lighted and that there were other opportunities for eye-strain, and he claims also that the movements cease when the eyes are closed. He is very positive in attributing the affection to eye-strain I looked carefully for any possibility of eye-strain or factors which may produce eye-strain in my three cases and was unable to discover any such.

Dr. L. C. PETER exhibited a case of **Laryngeal Habit Spasm** in a boy of 14, who had six attacks of chorea during the last four years. The symptom developed three months ago during an attack of chorea and consisted in a vocal sound about the pitch of the natural voice, repeated every few minutes, particularly under excitement. A laryngoscopic examination showed the vocal cords normal in size and color, but occasionally suddenly drawn together in spasm, held for a moment, and suddenly relaxed explosively, when the click was heard. The phenomenon ceased during sleep and was not present while conversing.

It was regarded as a habit spasm and not a symptom of chorea, because habit spasms frequently occur in choreic subjects and because the phenomenon is a bilateral co-ordinate movement, whereas the movements of chorea are always incoordinate and affect individual muscles rather than physiological groups, and also because the condition has improved under suggestive therapeutics and now can partly be controlled by the patient.

Dr. S. RUSH KETCHAM and Dr. L. C. PETER exhibited a case of **Tumor of the Cerebellum** in a boy of 7 years.

The child was to all appearances healthy until he was 22 months old, when he first began to walk. He never walked well but staggered and fell without apparent cause. About the same time he developed vertical nystagmus in both eyes, and after several years he lost vision in the right eye, had severe pains, vomited and became awkward in the use of his hands. He had a typical titubating gait, static ataxia, increased reflexes, incoordination of hands, and choked disc in both eyes. There were no convulsions, no vertigo, and the touch, pain and temperature senses were normal.

There was a vague history of tuberculosis in the family but the child's appearance was excellent and did not suggest a tubercular soil. Because of the child's excellent general health, aside from the symptoms of new growth and the slow progress of the symptoms, the neoplasm was thought to be a glioma.

Dr. KRAUSS.—The second child shown was originally brought to the eye clinic of St. Christopher's Hospital for what the family considered near-sightedness. There was at that time in the right eye a vision of movements only at 10 cm. and the right field of the right eye was greatly contracted. In the left eye there was a vision of 5-15. The fields could not be satisfactorily taken. At a later examination I found the arteries almost obliterated and the veins much narrowed. At this last examination I found the vision in the right eye nil, and in the left eye vision for finger movements only barely more than light-perception.

Dr. ESHNER.—I would make a point concerning the nomenclature. In the first case it seems to me that "tick" is a preferable name to "habit spasm," "habit chorea." The condition is not really a habit in the proper sense of this term and I believe it has nothing to do with chorea. I think this is at present the generally accepted belief. A distinct difference from real chorea is the fact that the same movement is repeated many times, and while I have seen a good many cases of chorea I have never seen laryngeal movements in a true instance of this affection. To be sure, arsenic may do good in these cases, as it has in the one reported, but I do not think the effect can be compared with the almost specific effect seen in real chorea. The influence seems rather to be that of a general tonic. As to the second case, I would suggest that the ataxic movements of the hands are not impossibly due to the poor vision.

Dr. PETERS.—As to the last suggestion I would say that some time ago when vision was present the ataxtic movements were much more marked when the eyes were covered, which indicates that the present poor vision does at least increase the appearance of ataxia.

Dr. JAY F. SCHAMBERG and Dr. H. B. KEECH reported a case of **Acute Fatal Pemphigus.** The patient was a girl of 5 who developed an outbreak of blebs ten days after being vaccinated. The eruption, which began on the shoulder of the vaccinated arm, spread rapidly in successive crops and soon involved the entire trunk and parts of the face and extremities. At the end of ten days the patient developed diarrhea with green stools, sank rapidly, and died three days after admission into St. Christopher's Hospital. The febrile movement during the time the patient was under hospital observation fluctuated between 101° and 103°. Smear preparations of the fluid of recent blebs contained numerous micrococci; these when grown upon culture media proved to be the staphylococcus aureus and albus. They were not regarded as bearing a causative relation to the disease. The authors look upon acute pemphigus as a disease of infectious origin and believe that in the case reported the infection may have gained entrance to the system through carelessness in treating the vaccine wound. No autopsy could be obtained.

Dr. R. A. CLEEMANN reported thirty-five cases of **Diphtheria** seen in private practice, treated by antitoxin. His method of giving the remedy was, in his early experience, to administer an initial dose of about 1,000 units, repeating the dose the next day if the result seemed unsatisfactory; he now gives an initial dose of 2,000 units, rarely finding it necessary to give a second dose. The results have been extremely satisfactory, only four deaths occurring. One of these deaths occurred six hours after the administration of the antitoxin and another two hours after the antitoxin was given. Both of these were in extremely severe laryngeal cases which were practically moribund when first seen. As it is not claimed that the antitoxin could avert death in so short a time it seems unfair to include these in the reports on the effects of antitoxin. In a third case, the child, an infant of 18 months, had improved considerably, but died after a sudden violent attack of gastrointestinal disturbance. The case occurred in the middle of August, and it seemed highly probable that this child really died of cholera infantum rather than of diphtheria. The other fatal case was one of the earlier cases treated and received only 1,000 units of antitoxin. Ten of the thirty-five cases showed laryngeal involvement; two of these, as mentioned, were fatal soon after first seen and the remaining eight recovered, three of them after intubation had been undertaken. Urticaria was seen in only two cases after the use of the antitoxin. Paralysis was observed in but one instance. Dr. Cleemann particularly spoke of the remarkable change in the course of the laryngeal cases since antitoxin has been introduced. In earlier years he had grown accustomed to the belief that a child with severe laryngeal involvement in diphtheria would almost inevitably die. Since he has used antitoxin he has almost come to believe that these cases will usually recover.

Dr. J. E. TALLY.—In looking over my records I see notes of twenty-seven cases treated with antitoxin, which demonstrates the importance of giving the remedy early. In twenty-four of these antitoxin was given before the fourth day, and usually before the third day, and in none of these cases was there a fatal issue; four of them were extremely severe; fifteen were moderately severe, and five were so mild that in the days preceding the general use of cultures from the throat they would hardly have been considered to be diphtheria. The three cases which were given antitoxin after the fourth day all ended fatally, a sufficient indication, I think, that it is essential to give the remedy as early as possible. Of the total number of cases only one exhibited a rash after the use of the antitoxin.

Dr. Jopson.—There has been a great deal of discussion lately of the proper method of administering antitoxin, and particularly of the proper initial dosage. Dr. Musser, for instance, recently described his method as the use of small doses, about 500 units, frequently repeated. I think the value of Dr. Cleemann's method of beginning with a large dose, about 2,000 units, is demonstrated by the very satisfactory results which he has seen, particularly in his laryngeal cases.

Dr. Griffith.—I admit that the case is to me an entire puzzle. I have never been able to dismiss the thought of a nephritis without albuminuria, a condition which certainly occurs with some frequency and which seems to me to be the most satisfactory, explanation in this case. Dr. Seilikovitch's suggestion that it was a scurvy is a very rational one and in most points is very satisfactory but the fact that there was no improvement in the symptoms, and that a fatal pulmonary hemorrhage occurred in spite of antiscorbutic treatment, is certainly a point of considerable importance against the possibility of its being scurvy.

DR. WILLIAM OSLEL

will visit Holland this summer and will be especially interested in the University of Leyden, so full of reminescences of Boerhaave and other medical worthies of the eighteenth century.—*Jour. Am. Med. Soc*, June 15, 01.

BOOK REVIEWS.

Manual of Diseases of the Eye.—For Students and General Practitioners. Pp. xiv, 406. Small octavo. With 243 original illustrations including 12 colored plates. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology. College of Physicians and Surgeons, New York. William Wood & Co. 1900.

This little volume has modest pretensions but contains in small compass much valuable information, and will prove useful, we doubt not, to many men who have no time nor opportunity to consult the larger works. It appears to be carefully printed and has an extensive index. There is a rather tiresome tendency on the part of the author to employ italicized words and phrases. These may assist the student in "cramming" for an examination, but are so absurdly numerous (from a third to a fourth of all the words on the page) that the general reader will hardly fail to be vexed over their continuous recurrence.

Infant-feeding in its Relation to Health and Disease. By Louis Fischer, M.D., Attending Physician to the Childrens' Service of the New York German Poliklinik; formerly Instructor in Diseases of Children in the New York Post-Graduate Medical School and Hospital, etc. 12mo, pp. viii–352, with 52 illustrations and 23 tables. Philadelphia: F. A. Davis Company, 1901.

The introductory chapters deal briefly with the scientific basis of infant feeding, with the anatomy, physiology, chemistry and bacteriology of the gastrointestinal tract of the infant, and with the chemistry and bacteriology of milk. Then comes a section on breast-milk and allied themes, such as wet-nursing, weaning, the diet of a nursing mother, and the influence of food on the weight curve.

The next chapter is entitled Raw Cow's Milk, and here it is that we find a succinct summary of the disputed questions of sterilization, modification and dextrinization given from the point of view of the author, supported by a number of leading authorities. The author champions raw cow's milk, properly diluted, as the best substitute for breast-milk, and emphasizes the chemical changes wrought in milk by sterilization, centrifuging, and the various other processes which artificially modified milk undergoes. The results of feeding with these artificial products are often rickets, scurvy and malnutrition.

Cow's milk, the various methods of sterilization, pasteurization and modification; the feeding of incubator-babies; artificial infant foods; forced feeding, rectal and nasal feeding, and the feeding of intubated children in diphtheria are the subjects next considered. The brief chapter on infant stools as a diagnostic means will be found a useful feature of the book. The last portion of the volume is devoted to the consideration of various diseases and disorders connected with infant feeding, and the appendix contains a dietary including many formulas for the preparation of suitable articles of diet for children of various ages. S.

"1. Pus is an avoidable complication in the treatment of appendicitis.

"2. The patient's welfare is best preserved by avoiding any of the complications due to pus formation.

"3. The walled-off abscess is not the blessing to be sought, but rather an evil to be avoided by prompt surgical interference as soon as the symptoms of appendicitis manifest themselves.

"4. Operation on cases of walled-off pus imperils the patient's chances for recovery, on account of liability to infection of the peritoneal cavity.

"5. Fecal fistula as a result of a walled-off appendicitis abscess is an unavoidable sequel to appendicitis and should not be permitted to occur.

"6. The latter statement is true of all complications and sequlæ of appendicitis due to pus formation."—DEAVER, *Jour. A.M.A.*, January, 1901.

ABSTRACTS

A STUDY OF ONE HUNDRED AND FORTY CASES OF MEASLES WITH REFERENCE TO THE APPEARANCE AND VALUE OF KOPLIK'S SPOTS AS A DIAGNOSTIC SIGN.

William J. Maroney, M.D., *Yale Med. Jour.*, vii, 4, 1900) writes as follows;

The following table sums up the results of the examination of 140 cases with regard to the appearance of Koplik's spots:

Time of Recognition.	*Cases.*	*Remarks.*
At the beginning of the eruption.	53	In the large majority of these the children did not come under the observation of the physician until after the appearance of the eruption.
Twenty-four hours before the appearance of the eruption.	51	Slight fever, ranging from 99° to 101°, was present in all the fifty-one cases. Slight coryza and conjunctivitis in thirty-five.
Forty-eight hours before the appearance of the eruption.	20	Slight fever, as above, but no coryza.
Three days before the appearance of the eruption.	4	Slight fever, as above, but no coryza.
Four days before the appearance of the eruption.	2	Slight fever, as above, but no coryza.
Spots observed, but no eruption.	2	Both children were very delicate. Hyperpyrexia, etc., intervened and death occurred in a few days.
No spots observed.	8	In four of these the children were marantic, with very dry mouths. Two had apthous stomatitis covering the mucous membrane.

It will thus be seen that in 79 cases this sign was present before any eruption appeared on the skin. In only two cases of the 132 in which Koplik's spots were observed, did the characteristic eruption of measles fail to follow the appearance of the spots. Both were undoubtedly true measles, but the children did not react; in other words, "sickened for the disease," as it is said.

The fact that the spots were not observed until the time of the eruption in such a large number of cases (53) is accounted for in great part by the large number of children (some 800) in the hospital, which made it impossible for the two internes to make careful and systematic daily examinations of the mouths of the whole number. However, 45 cases were isolated because of the presence of Koplik's spots with some fever. The presence of fever with the spots has not been brought out before, but in none of the 132 cases in which the spots were observed was their absence of at least some slight fever. In fact the occurrence of fever with the spots was considered as almost necessary for a positive diagnosis of measles.

Another point which may be of some value and which has not been considered heretofore, is the fact that the spots are seldom recognized in the mouths of marantic children. This might be due to the dry condition of the mouth, which is seen in these children, or to the fact that they do not react well to the infection.

The study of these cases seems to prove conclusively that the presence of Koplik's spots is an absolutely pathognomic sign of measles, from which a positive diagnosis can be made at an early stage of the disease; that they do appear in a great majority of cases before the appearance of any skin eruption, and in almost one-half the cases before any coryza or conjunctivitis, and that their recognition offers a means of early isolation and an opportunity of limiting, if not of aborting, epidemics in hospitals and institutions.

THE CARE OF PREMATURE BABIES IN INCUBATORS.

Many lives can be saved annually by the general use of the couveuse for premature babes. Before the innovation of this means of practically substituting an artificial environment for the immature infant, all these lives were sacrificed upon the altar of inexperience and ignorance. Now, with the advent of the incubator, we may save these children for useful and profitable lives. James D. Voorhees gives a good review of the work done at the Sloane Maternity Hospital in New York in the direction of incubator life for premature babies.

At the Sloane Maternity Hospital premature babes are classified as follows:

1. Those treated as babies at term.
2. Those wrapped in cotton.
3. Those kept in the incubator.

The Lion incubator is probably the best in use. It fulfills the four problems to be solved in the care and management of premature children:

1. The maintenance of a proper temperature.
2. The prevention of exhaustion.
3. The administration of the proper amount and kind of nourishment (permitting the nurse to feed the child through a glass window at the side).
4. The avoidance of infection; the temperature is kept equable by means of a metallic thermo-regluator.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
Under the direction of George Alexander Saxe, M.D.

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES, January 15, 1901.

1. **Diabetes Mellitus in a Child Aged Six Months.** By L. BAUMEL.—The author observed two cases of diabetes mellitus in children. The first patient was a child of thirteen years and the other of six months. Both died, but an autopsy was only performed in the last case, which forms the subject of this paper. A marked atrophy of the pancreas was found.

In view of the recent observations of Ludwig, Rossa and Bell, it is highly probable that diabetes mellitus may exist in the fetus. Some authors claim that the glycosuria observed during the first months of life is nothing but an accidental presence of lactose in the urine, due to some gastrointestinal disturbances. The present author, however, considers such cases as instances of diabetes mellitus in attenuated form. The causes given for the cases of infantile diabetes are heredity or infection, but the author does not think that either of these factors is the true cause of the trouble. In his opinion, the pancreas is always the primary cause, directly or indirectly.

The author also thinks that dentition may act as a contributing cause, irritating the trigeminal nerve and reflexly affecting the medulka and pons. In speaking of the treatment of these cases, the author points out that the administration of alkalies would benefit the condition of the pancreas; the use of calcium phosphate or glycerophosphates would help the growth of the teeth. As thrush is a frequent complication of dentition, he recommends proyhylaxis against it by swabbing the mouth with boric acid lotions, or by the use of the following mixture, given in doses of two teaspoonfulls at intervals of three hours:

℞ Lime water	
Lactucarium water	āā 60.0.
Simple syrup	30.0.
Tincture of musk	4 drops.

In addition, bromides may be required to soothe the irritability of the nervous system, and pancreatin may be given in cases that resist the above-mentioned measures. Possibly, in future hypodermatic injections of pancreatin may be used in the diabetes of infancy, as the ferment is digested in the stomach. Of course, the disadvantage of such a procedure would be the necessity of making punctures in the skin of a diabetic child.

2. **The Diagnosis of Diphtheria.** By Dr. Dokin (Reprinted from the *British Medical Journal*, November 3, 1901).—The tendency of the average physician to-day is to rely blindly upon the results of bacteriological examinations in diphtheria. The physician should not wait until the report of the bacteriologist comes in, but should treat a case as diphtheria if the clinical signs warrant such a course. If there are no clinical signs typical of diphtheria and if the report shows diphtheria bacilli, the case should also be treated as diphtheria. The mere presence of bacilli in the nose or throat, without any other symptoms and without virulence on being tested upon animals, may be ignored in practice.

Physical Education in Japan. By Dr. M. Yamane (of Tokio).—Physical education has been neglected in Japan until the last ten years, when it has begun to progress rapidly under the efforts of a number of persons, for the most part people with foreign educations, who realize the benefits of physical training. The author gives a historical sketch of physical education in Japan, beginning with the military exercises of the ancient warriors and knights and with the games of the peasantry. He says that football, which is regarded as an English game, was imported into England from Japan, where the game flourished for many centuries. All foreigners who visit Japan agree that the Japanese are masters at football. Other exercises that are favorites in Japan are wrestling, boating, polo, swimming, shooting, tug-of-war, etc.

The games played by Japanese children include driving tops with whips, handball, skipping-rope, etc., but the national game, both for children and adults, is kite-flying.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, February, 1901.

1. **A Study of the Changes in the Functions of the Liver and the Kidneys in the Course of Acute Gastroenteritis in Nurslings.** By Dr. E. Lesne and Dr. Prosper Merklen.—The authors have studied the urine in a number of infants affected with gastroenteritis in order to find what disturbances in the function of the liver and kidneys have been caused by the intestinal infection. The clinical signs bearing upon disturbances of liver and kidney functions in gastroenteritis of nurslings have not been mentioned in any text-book nor in any description of the disease. They may only be elicited by minute observation. On the part of the liver, save a slight hypertrophy, there is no signs of disturbance. These infants never had jaundice, and only the examination of the urine shows the state of the liver. In acute cases, however, there is a hypersecretion of bile, as attested by highly-colored green stools, while in certain prolonged cases, the biliary secretion is lessened and the feces are

colorless. On the part of the kidney, albuminuria has been noted by several observers, and other signs have been attributed to disturbances of the renal function, particularly dyspnea and edema. There are still other signs, the value of which, however, is disputable. Thus Koplik mentions an alternating stupor and restlessness. Stupor seems to be more frequent in these cases than agitation. Convulsions are so frequent in children that they lose their diagnostic significance. The same can be said of hypothermia, which is one of the symptons of cholera infantum and of severe gastroenteritis. Koplik mentions vomiting of a persistent character, which he attributes to uremic poisoning, The authors have never observed so persistent an attack of vomiting in the course of an acute gastroenteritis. In a few cases they saw myosis—a sign of uremia, in these infants. Hence, the only clinical signs of hepatic or renal disturbances in acute gastroenteritis of nurslings are changes in the color of the stools, edema, dyspnea, and occasionally myosis.

The urine in gastroenteritis of nurslings presents characters essentially different from the normal standard. In mild cases, with little fever and a good general condition the urine approaches nearest to the normal in color, specific gravity, and chemical constitution, and this is always a good prognostic sign. In the more severe case the urine is changed in many ways: The quanity diminishes and it is not rare to see it fall from 200 grammes to 50 or 30 within twenty-four hours. The color is dark-brown, often very turbid. The acidity is increased, for litmus paper turns red more quickly than in normal conditions. If not preserved by means of naphthol, these urines decompose more quickly than normal ones and become rapidly alkaline. Their specific gravity is 1015 or 1020, or more, and their odor is very penetrating. The cryoscopic coefficient (The relative freezing point as compared to that of normal urine.—Ed.) shows that the concentrated urines are hypertonic, as the coefficient rises from 0.0 to 1.10, 1.20 pr even 2.0.

Biliary pigments are, as a rule, absent from these urines. Indican is found in them as a rule, but not constantly as may be supposed from the fact that indican is a product of intestinal decomposition. Of forty-six nurslings examined by the authors, only thirty-three had indicanuria, and no relation could be established between the indicanuria and the clinical type of the gastroenteritis. Ehrlich's diazo-reaction was always absent in these infants.

Experimental dietetic glycosuria in these cases gave the following results after all sources of error had been excluded : In acute gastroenteritis in a number of infants ranging from birth to 17 months, no glycosuria was found after doses of from 4.29 to 5.61 grammes of glucose (in the form of syrup), per kilo. of body-weight. Once it was noted in a child of five months after a dose of 5,81 per kilogramme. On the other hand large doses such as 7.11 gm. per kilo, and even 8.88 per kilo, were given to some infants without producing glycosuria. The authors believe that this is due to an increased activity of the liver in acute gastroenteritis, but it is too early to draw this conclusion. They found that alimentary glycosuria is allied to intense diarrheas and great emaciation—in other words to prolonged cases. In one case out of three tested, they found glycosuria in chronic gastroenteritis. They did not find it in any acute case after the ingestion of small amounts of glucose.

The administration of methylene-blue in pills was followed by elimination of the drug in theurine without any intermittence after the elimination had once begun, If the blue was injected into the subcutaneous tissues, however, there was in a number of cases an intermittence in the elimination of the dye. Hence, it appears that subcutaneous injections of methylene blue seem to give in acute gastroenteritis a measure of the functional activity of the hepatic cells.

The amount of urea was constantly diminished in acute gastroenteritis, if one considers this amount in relation to the age of the patient. The diminution of urea is in proportion to the intensity of the infection. As related to the weight of the child, this diminution is as follows: On the average an infant with gastroenteritis eliminates 0.066 gm. of urea per kilo. if under one month old; 0.088, if from three to six months; 0.228 from six months to a year, and 0.359 from one to three years. The diminution will be apparent when one remembers that the normal amounts for these ages are 0.23 ; 0.30, and 0.50 in nurslings, and tend to approach 1.0 after weaning. The diminution of urea as a prognostic factor is of more value in the chronic cases than in the acute, because in the latter the infant is on a diet of water and cannot be expected to eliminate as much urea as usually. On the other hand, the investigation of the two urinary coefficients $\frac{\text{Ct.}}{\text{Azt}}$ and $\frac{\text{Azu.}}{\text{Zzt.}}$ is of great value in acute cases. The first indicates the relation of the total amount of carbon Ct. to the total nitrogen in the urine Azt. The second shows the relation of the nitrogen of the urea to the total amount of nitrogen in the urine. These coefficients differ but little from the normal if the gastroenteritis tends to get well, and deviate considerably if the malady tends to grow worse. In chronic forms they are always considerably removed from the normal.

The toxicity of the urine is greatest in the severe forms of gastroenteritis. (To be continued.)

2. **Glandular Fever (Fievre Ganglionnaire of Comby) due to the Pneumococcus. Probable Contagion.** By Dr. Londe and Dr. Froin.—Comby, in describing this condition, says that the infection is probably due to the streptococcus. In the present case the cause seemed to be the pneumococcus, The child belonged to a family where the grandfather had died of pneumonia shortly before the onset of the present disease. The first symptoms were a slight cough and coryza, and a swelling in the retropmaxiallary and submaxillary regions on the left side. The glands could be made out by palpation and were painful on pressure, and there was a febrile movement. There was diffuse redness in the pharynx and coryza, but no stomatitis, no swelling of tonsils or palate. The urine contained a great deal of uric acid, indican, and traces of albumin. The spleen was perceptible on percussion. The glands in various parts of the body were slightly enlarged. On the following day the redness in the throat disappeared, the fever assumed an intermittent type, with a rise

every second day. The swelling, after having extended downward a little, remained localized in the parotid region. There was no edema and the skin was not adherent over the swellings. The fever fell quite rapidly, but the swelling of the glands continued for some time, and as it receded, the two glands which formed it were distinctly felt in the retro-maxillary region. During the convalescence, the patient was seized with an attack of pertussis-like cough, probably due to a slight swelling of the tracheo-bronchial glands. Examination of the pharyngeal mucus showed the presence of the pneumococcus.

THE TREATMENT OF SIMPLE GOITRE IN YOUNG ADULTS.

Murray (*Edin. Med. Jour.*, Aug., 1900) says: The most favorable cases of goitre for medical treatment are undoubtedly those of simple parenchymatous enlargement of the thyroid gland occurring in adolescents and young adults. In these there is a uniform general enlargement of the whole gland, which comes on gradually and painlessly. At first there is merely some fulness of the neck, which may cause no inconvenience, or may escape notice altogether. As the goitre increases, however, it attracts attention by its size and by the increasing tightness of the collar. As the goitre grows still further. the discomfort it causes is increased and there may be dyspnea from compression of the trache. It seems probable that in this form of goitre there is a true hypertrophy of the gland, which occurs in response to some demand for an increased supply of its secretion. In some cases it appears, however, that the hypertrophy, once started, continues to increase until it passes physiological limits, becomes pathological and does not diminish without suitable treatment. In these cases treatment by thyroid extract, so as to supply for a time the excess of secretion which is required from an external source, is of great service. When the extraordinary demand for thyroidal secretion is thus supplied, the hypertrophied gland is able to pass into a resting condition and undergoes a partial atrophy, with corresponding diminution in size. In this respect the enlargement may be compared to that of the mammary gland during lactation, which, as soon as the child is weaned and the demand for its secretion ceases, returns to a resting condition and decreases in size.

PEDIATRICS

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Vol. XII. JULY 15th, 1901. No 2.

ORIGINAL ARTICLES

TUBERCULOSIS OF BONE.*

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THIS is by far the most frequent chronic disease of bone and is seen most often in the young. Frequently it will appear to be the primary lesion, yet there is in the majority of cases an infection atrium in the skin or mucous memmembrane which has admitted the bacteria. Such an abrasion may be overlooked owing to its situation or to the fact that little or no reaction has occurred at the point of infection. This may be accounted for by the resistance of the tissues at this point being sufficient to inhibit the growth of the bacillus without causing its destruction. Attached to a white cell it is carried into the blood only to multiply when it becomes localized at a point of least resistance. This locus minoris resistentia is found in the bone next in frequency to the lungs and lymphatic glands. Traumatism plays an important part in the determination of this stoppage of the bacteria. A very slight trauma seems more likely to be followed by a tubercular inflammation than a more severe one.

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* Read before the Louisville Surgical Society.

As pointed out by Volkmann, severe injury is not often followed by tubercular disease of bone, probably because the bacillus tuberculosis is unable to develop in the presence of the active cell proliferation which is always present in the repair of a severe trauma. Thus we rarely, if ever, find tuberculosis develop at the seat of fracture. It is also thought by some that the arrangement of the blood vessels of the epiphyses of bone in the young is important as a factor in the localization of the bacteria.

Max Schiller has proven experimentally that a slight trauma inflicted upon the bone of an animal infected with tuberculosis would cause a localization of the germs at the injured point. Two or more foci of infection may be present in the same case.

The changes which take place in an infected bone are very similar to those occurring in the soft structures. The classification given by Koenig has never been improved upon, viz.:

1. The granulating focus.
2. Tubercular necrosis.
3. Tubercular infarct.
4. Osteomyelitis.

The granulating focus consists of a small greyish or yellowish tubercle about the size of a pea, becoming tubercular necrosis when there is an involvement of an area large enough to cause death to a visible portion of bone.

Tubercular infarct applies to the form resulting from the obstruction of a vessel with a tubercular embolus and the formation of a cone-shaped sequestrium.

Diffuse (tubercular) osteomyelitis applies to the form in which the whole bone and its medulla are involved. It is quite unnecessary to describe minutely the histology of the product of the bacterial growth as we are all familiar with this formation. The cell proliferation produces a granulation tissue which, by pressure, causes absorption or rarefaction of the adjacent bone, and beyond the area of infection a proliferation of bone cells occurs which produces a firm layer of bone, an effort upon the part of nature to wall off the diseased tissue and to render it innocuous. In the more active and extensive forms of the disease, necrosis of a considerable area is to be expected and the sequestrium shows a worm-eaten appearance due to the destruction of bone by the granulation tissue. Here, again nature by an involucrum attempts to protect the healthy tissues. Encapsulation with later absorption of the inflammatory product is a very favorable termination. In the vertebra and elsewhere we frequently find the reparative processes capable of dealing successfully with the disease, the products of inflammation being absorbed and a firm, bony structure remaining.

On the other hand, softening of the granulation tissue may occur, forming the so-called cold abscess, which slowly but steadily pushes toward the surface; finally softening of the skin occurs followed by rupture, the fluid incompletely drains, pyogenic infection results and the patient shortly succumbs to septic poisoning. If after softening occurs the process is checked, a small amount of the tubercular pus may be taken care of by the tissues and recovery take place, or if the sac is drained without pyogenic or saprophytic infection, a sinus may form, closing after months or years when the dead bone has been disintegrated and thrown off. Owing to the frequency with which the epiphyseal extremities of the long bones are involved in the processes we expect involvement of the adjacent joint to occur in many cases. The larger percentage of cases of joint tuberculosis are primary osteal. Such involvement of the joint, of course, adds considerably to the gravity of the condition.

The symptoms are unfortunately more or less obscure during the early stages of the disease. The general health may be little or not at all affected at this time, but after a while anemia and a more or less constant though slight evening exacerbation of temperature is present.

The local symptoms are also not pronounced until the destruction of tissue is quite marked. Pain is nearly always constant though not severe. The child will complain of feeling tired and fails to play with other children. Motion or pressure nearly always increases pain, while rest and removal of pressure will greatly relieve it. The child will be restless at night owing to the increase of pain at this time.

In small children it is often difficult to determine the situation of the pain. which is, in some instances, not referred to the seat of the lesion. Tenderness on pressure is quite an important diagnostic sign. Muscular atrophy in the affected limb is to be expected in all cases. This is partly the result of disuse, but perhaps, to some extent, due to the general anemia and poor local nutrition. Rigidity of the muscles forms an important diagnostic sign, especially in vertebral disease. This is due to an involuntary effort of nature to provide rest for the part.

Swelling is usually absent until softening of the compact bone occurs, but it may not be noted in some of the long bones as the result of the hyperplasia following efforts at repair. The periosteum is affected late in the disease, differing in this from syphilis, which is prone to attack the covering and the outer layers of the bone. Redness is not to be expected in tuberculosis of bone until an acute infection is engrafted upon the chronic one, or until pointing of the cold abscess occurs. A slight edema over the inflamed area may be noted somewhat earlier.

The diagnosis should be made as early as possible to obtain the best results, and upon this point I desire to lay particular stress. The lameness and pain, the latter increased at night, the atrophy and rigidity of the muscles and the localized tenderness will serve to make the diagnosis. In the late stages the cold abscesses and local evidences of destruction of bone make the diagnosis easy. An invaluable aid to the early determination of the presence of bone tuberculosis, as well as to the extent of the lesion, is the Roentgen-ray. This will clearly show the rarefied area, and in all doubtful cases a skiagraph should be made. The Roentgen-ray will not, of course, determine the form of infection which causes the destruction of bone. Exploratory puncture may be of some value, as the needle can readily be thrust through the rarefied bone.

The Prognosis.—Contrary to what would be expected, this is one of the least fatal forms of tuberculosis. Under favorable conditions a spontaneous cure may be expected. An early diagnosis with prompt and properly applied treatment will usually obtain a favorable result. There is always present in these cases, however, a constant menace of further localization. Someone has well said that a patient who suffers from glandular tuberculosis in childhood is prone to bone tuberculosis in adolescence and to die later of pulmonary tuberculosis.

The prognosis is always more favorable if the tubercular focus is localized and so situated as to allow its complete extirpation. Pyogenic infection markedly increases its gravity. The involvement of a joint also increases danger to life.

The chief factor in treatment is rest for the inflamed part, with such position as will favor the circulation. The general health of the patient must not be sacrificed for position and rest. The ambulatory treatment of disease of the vertebra, femur, etc., obtains rest for the part and aids in bringing up the general health. Any of the many forms of splint suitable to a given case may be used. Ignipunature during the early stages offers some benefit to the patient, by relieving the tension, by destroying at least a part of the infectious material and by stimulating a plastic cell proliferation which may overcome the slowly growing bacillus. Careful asepsis may be used to prevent infection through the puncture, which is made with knife point of a paquelin thrust through the skin, soft tissues and into the focus of the bone.

When the disease progresses in spite of rest and other palliative measures, or when there is danger of joint involvement, operative treatment should be instituted whenever feasible. This may consist of an erasion, a more or less typical resection of bone, or of amputation. The latter is only to be advised when no good can be expected from any of the less extreme operative measures and when the general health is becoming impaired. I have seen marked improvement of the general health after removal of a limb for diffuse tubercular osteomyelitis. The operation for removal of the focus should be radical, all the infected bone should be excised and the remaining bone disinfected by the application of a solution of chloride of zinc or other caustic, or by the application of the actual cautery, pure carbolic acid, etc. Complete iodoformization of the raw surface will, it is claimed, inhibit the progress of the disease and also aid in hemostasis. The application of pure carbolic acid to all parts of the raw surface, followed by alcohol to prevent too great destruction, will often prove of advantage. Some operators attempt to close the wound for union under a clot, but my experience leads me to consider the open treatment best and safest. The use of balsam of Peru is valuable as a stimulant to active repair. Park recommends iodoform gauze soaked in balsam of Peru containing 10 per cent. of guaiacol as a dressing.

The epiphyses and periosteum should be saved when possible to do so, owing to the imperfect repair which results if these structures are sacrificed, but not at the risk of leaving some diseased bone. If recurrence takes place, as is frequent, a second effort, or if necessary more should be made to eradicate the disease. The resultant cold abscesses should be opened only when absolutely necessary and under the strictest asepsis. Aspiration with injection of an ethereal solution of iodoform (10 per cent.), or an emulsion of similar strength, will often prove beneficial. Where the entire lesion, including the abscess wall, can be radically removed by an open operation, such procedure is clearly indicated. The management of a given case must be determined by each surgeon for himself. He will be guided largely by experience in such cases, and by his ability to prevent or combat pyogenic infection. The old sinuses which persist after spontaneous opening in cases that are inoperable are best treated by the injection method.

The constitution of the patient should be built up in every possible way by tonics, good food, fresh air, sunlight and moderate exercise. Guaiacol is highly recommended in these cases or the carbonate of creosote may be given instead. Cod-liver oil, the hypophosphites and arsenic all have their advocates.

DISCUSSION.

Dr. August Schachner.—What we shall do in these cases is fairly clear and has already been pointed out. Unfortunately, however, it is like trying to build a first class vessel out of third-class timber. The sooner we place tuberculosis in the same category as sarcoma and carcinoma, not clinically, but so far as surgical treatment is concerned, the sooner will our results improve. We ought to exercise the same degree of carefulness in operating for tubercular lesions that we observe in operating for malignant disease. The reason why operations for tubercular lesions are not attended with success is because the operative steps are not made sufficiently thorough. Nature does a great deal, but she cannot do everything; she has a large contract on her hands when she has a tubercular process to deal with.

Where there is bone tuberculosis, if we can get rid of all infected bone areas and then treat the flaps by transplanting them, as recommended in the Norbury operation, it is a very good way. I have tried several times to get union under the moist blood-clot but it has not succeeded very well.

We must take into consideration that when we operate for this condition we are not only dealing with a patient who is constitutionally below par, but we are dealing with a local condition where we have every chance of infection. Usually we already have a sinus or cold abscess, we already have not only a tubercular but a mixed infection; or we may start in with only the tubercle bacillus and have pyogenic infection afterward. For these two reasons, that the general resistance of the patient is not one to make him a first-class surgical subject and that the local condition is likely to be a mixed infection, it is quite difficult to get good union under the moist blood-clot, after the Schede method.

Dr. A. M. Vance.—One point in the paper, the necessity of having these little patients move about, is often a serious question. If we could make our diagnosis early that might be admissible, but I have become convinced lately that the bed treatment, in the vast majority of these cases, is decidedly the best. I am sure that with the forced feeding and the rest in bed these children do not run down, particularly if we have them in a hospital. And when you consider the difference between the bed treatment in the hospital and the ambulatory treatment at home, I think decidedly the bed treatment takes the palm. I believe it is the London Orthopædic Hospital where no other treatment is applied, these children with hip-joint disease are put to bed and kept there until well. Where there is an abscess, which naturally destroys the possibility of the ambulatory treatment, except on crutches, the bed is always best. The ambulatory treatment on crutches in the ordinary surroundings of these patients is never carried out. The child will put his crutch up against the fence and play marbles with other children in spite of anything that can be done. Doctor Sherrill is certainly mistaken when he says the general health suffers by reason of the bed treatment.

The most important part, so far as these cases are concerned, is our ability to diagnose them early, and impress upon parents the necessity of establishing treatment at that stage. Unfortunately, doctors do not recognize the importance of this. They talk about growing pains; they talk about the child growing out of it, etc., until the opportune time is passed.

I would like to give my idea about why these children suffer with bone disease more at night. Nature puts these joints at rest while the child is awake by muscular reflex rigidity; during sleep, just as under chloroform, this rigidity is relaxed and the child cries with pain. This is proven by the fact that as soon as a proper weight is put on the foot the night cries cease. But we seldom get a chance to make the diagnosis sufficiently early to get the best results from treatment, because we do not see the patient. The old "growing pains" superstition is a serious drawback to us in the line of work.

DANGERS OF THE THERMOMETER.

1. It is possible for the thermometer to be laden with the usual flora of the oral cavity.

2. Such bacteria may retain their capability of growth for an indefinite time, at least two months. as shown by the above experiments.

3. Many pathogenic bacteria possess similar capabilities, and it is not unreasonable to assume, although the above experiments are not conclusive upon this point, that transmission of bacterial disease by the thermometer is possible.

4. Thermometers are easily disinfected.

5. Where possible each patient should be possessed of a thermometer, as much his own property, and as sacred to his own use as his toothbrush.

6. Where for reasons of economy or otherwise it is impossible to carry out the recommendations expressed in conclusion 5, the thermometer should be disinfected before and after using.

7. The custom now prevalent in the hospitals, of keeping thermometers in disinfecting solution is to be commended.—Rosenberger, *American Medicine.*

A CASE OF MICROCEPHALUS.

By W. O. Roberts, M.D.,
Louisville, Ky.

THE little girl whom I bring before you was seen by me for the first time about two years ago; she is 5 years old and comes of healthy parents; they have one other child older than this who is an exceptionally bright girl. This child did not differ from other children intellectually up to the time she was 6 months old; at that time the first convulsion occurred and since then convulsions have steadily increased in frequency and also in severity. She has always been of quiet mien, never having shown any excitement such as would be expected from the condition now present. She has never walked nor has she ever talked. She seems to hear and see normally and at times seems to notice things and to show from her expression a certain amount of intelligence. You will observe the shape and condition of the occiput.

The parents brought the child to me again recently to determine whether or not anything could be done in a surgical way for the relief of this condition. When I saw the patient two years ago I advised against anything of an operative nature, and when they returned I requested them to remain over so the little girl could be brought before this meeting to get an expression of opinion of the fellows on the subject. Since they have been here, I understand from the mother, she has consulted two or three members of this society.

I would like for you to examine the child carefully and give an opinion as to what you think can be done.

In eating the child can take food to its mouth with its hand without much trouble but cannot use a knife or fork.

DISCUSSION.

Dr. Jas. B. Bullitt.—I have had an opportunity of seeing this little girl before. In my opinion the case does not come under the head of ordinary microcephalus. The child's head is perhaps smaller than in other children of its age, yet when you

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* Abstracted from proceedings of the Louisville Surgical Society.

consider the various diameters of children's heads and the several diameters of this child's head, I do not believe it will be found markedly deficient in size. There is a pronounced depression in the back of the head which is readily determined. She shows no spastic symptoms whatever, and I believe she is not hemiplegic. If she did not have this depression in the back of her head the case would undoubtedly be classed among the ordinary microcephalics.

As regards any possibility of relief, I believe it has been determined that in ordinary microcephalic cases surgery is of no real practical benefit. Operations therefore upon microcaphalic children have been discontinued as being unjustifiable. But considering the fact that this child presents a factor which is unusual, that is to say, this marked depression, and the further fact that the case is absolutely hopeless without some kind of intervention, I believe it is the proper thing to state to her parents that there is a possibility that something might be done for her in the way of surgical intervention, viz., opening the skull at the point of depression and removing the bone over this area. It is hardly to be believed that a child who gives no greater evidence of intellectual power than this child does would be entirely restored in any event by such an operation. But it does seem to me possible that it might restore the intellect to a considerable degree; and in view of the fact that there is absolutely no other outlook for the child, my advice to the parents would be to resort to such surgical intervention.

Dr. A. M. Vance.—I saw this little girl a few days ago and made quite a careful examination. I think that is a case of ordinary microcephalus with the addition of this deformity of the skull. Assuming that this deformity of the skull is the sole cause of its mental deficiency, I do not believe that its complete removal would have any effect in changing the condition of the brain. It has been there so long that whatever brain matter is affected by it will be in an atrophic condition, the membranes will be changed and I do not believe at this late date we could hope for any redevelopment after relief of this pressure. I also believe in a child of this character an operation for the removal of that much bone in this situation would be more hazardous than the ordinary double craniectomy which is sometimes practised for the relief of microcephalus.

My opinion is that this proposed operation will be one in which there will not be the slightest chance for good to come to the child, but will entail the greatest jeopardy to its life.

Dr. I. N. Bloom.—There is a thickness about this child's tongue when protruded which reminds me somewhat of a myxedematous condition, although there appear to be no other evidences of that disease present. Should the proposed operation not be attempted it would be interesting to know what effect the internal administration of thyroid extract would have. In the event of the operation not being performed, I think thyroid feeding might possibly offer some hope. We do not know exactly how thyroid extract acts, but we do know that benefit has followed its use in many other conditions besides myxedema.

Dr. August Schachner.—The mother states that at no time has there been any impairment of vision in this child. I agree with Doctor Vance in the main, that this is a case of microcephalus, and that in all probability the depression in the back of the head may add somewhat to it. I do not know, however, that the depression has much to do with it, because it is about in the region of the cortical location of sight, and had it been an important factor we should naturally suppose there would have been some ocular symptoms.

If an operation were done it is possible that the convulsive symptoms might abate; I should not look for any other change. If operation is determined upon it would be much safer to tunnel in on one or both sides than to go through the depressed portion of the skull; it would be safer to trephine in a location further away from the vessels where we are less apt to have trouble.

The late Dr. John F. Barbour investigated this subject thoroughly, reviewing all the German and French literature, and proved clearly that the results of opening the microcephalic skull had been productive of no good.

Dr. Turner Anderson.—The only outlook possible in this case would be a surgical procedure. The administration of thyroid extract might be beneficial; but I agree with the view expressed by Doctor Bullitt, that there are certain conditions presented by this child which would lead us to suppose an operation might be of some service. The age of the child and its particularly well nourished condition should be taken into account. I am disposed to believe that operation, either tunneling in to allow expansion, taking off pressure from the brain, or the more extensive operation of taking out a considerable area of the occipital bone, would promise something in the way of relief. I do not see any prospect ahead for improvement in the present condition of affairs, yet there is no telling how long the child may live as it is now. It is certainly microcephalic; the child has a small brain; at the same time from the measurements it is not much under the average. We often see children with heads no larger than this who present all the evidences of intellection to a perfect degree.

While of course nothing can be promised from surgery, yet I agree with Doctor Bullitt that operation would not be unjustifiable.

Dr. Louis Frank.—The question which suggests itself to me is whether or not the trouble is due to such a complete ossification of the bones that the condition does not permit of expansion of the brain or whether the disease is in the brain itself.

I agree with Doctor Vance that from the literature of the subject and what we know of the effect of such operations, there is nothing to be hoped for by operating upon this little patient, and anything that might be done would be done in the spirit of experimentation, running the chances with really no outlook for beneficial results, subjecting the child to risks which are not to be compared with any good to be derived from the operation. It is true that the child in its present condition merely exists, still there is life here, and to me the case is analagous to one where a cancer has extended beyond the possibility of removal. I see nothing to be gained by operative intervention in the case before us.

Dr. A. M. Vance.—When craniectomy was first proposed for the relief of microcephalus it was thought that the ossification was the primary cause of the disease. It is now understood that this was an erroneous idea, that the arrested growth of the brain was the primary trouble and that the skull ossified because the brain no longer kept it from doing so by gradual development.

If this is admitted to be a microcephalic child, leaving out of account this depression, the whole world now, as I understand it, is against the operation of craniectomy. No one now believes this operation should be performed for microcephalus. Lanelongue has classified his eighty cases without giving any results, and if we admit that, then of course the question as to surgical intervention is settled. If you think this depression plays any part in a localizing way then there might be some warrant for considering an operation. As I believe this is purely a microcephalic child with this peculiarity of deformity of the skull, I do not believe an operation is justifiable because we would break the first law of surgery, which is that we must see some possibility of a favorable outcome from our procedures.

Dr. W. O. Roberts.—Doctor Vance, in his second remarks, has stated just what I wanted to say in closing. When this child was first brought here it was soon after the operation of craniectomy had been introduced, and I deferred advice as to operative procedure because of the fact that I wanted to see what the outcome of this operation, as generally performed on microcephalic children, would be.

Since the child has been here this time I have looked up the subject pretty thoroughly and find the weight of opinion is about as Doctor Vance has just expressed it, that the condition of the bones of the head is due to the want of development of the brain. In these cases there is a want of development of the brain itself. I believe the small skull in this case is due to the want of development of the brain and for that reason I have come to the conclusion that an operation would promise little or nothing.

It might be well to follow the suggestion of Doctor Bloom and put this child upon the thyroid extract.

GROWING PAINS; WHAT ARE THEY? THEIR TREATMENT.

By J. A. Hale, M.D.,
Alto Pass, Ill.

OWING to the frequency with which the general practitioner meets what are termed "growing pains" by the laity, and attributed by physicians to neuralgic phenomena of growth in the young, the writer desires to enter a protest against lax methods in the diagnosis.

A series of cases of "growing pains" carefully observed will exhibit besides the initial pain distinct clinical phenomena, merging one into another, and appearing at irregular intervals, and invariably diagnosed without any thought of connection between their manifestations and the prodromal symptoms of muscular spasm and pain. The fact that children suffering from "growing pains" are usually ruddy of cheek, with red lips and full pulse, bright eye, intelligent, and well nourished, and that the tendency of the pains is apparently toward spontaneous recovery has misled many diagnosticians; and hence their oversight of certain sequelae, which are often late in appearing.

Looking over the field of experience in a large practice among children, in both city and country, and under entirely different hygienic surroundings, the inference was drawn by the writer that "growing pains" were rheumatoid in character, were, in fact, rheumatism under different conditions from those existing in adult life, and attended with complications secondary to this disease. The clinical evidence collected by careful observations corroborates this inference, and every practitioner may be his own authority on this subject and arrive at the same conclusions.

In the presence of such a series of symptoms comprising muscular pain and spasm with a perceptible though slight rise in temperature, followed in a short time by rheumatoid complications, one naturally turns to those remedies which have proven almost specifics in their antirheumatic effect, and it is customary to administer salicylic acid or some of its derivatives. Under their use there is complete subsidence of pain and relaxation of muscular spasm; another positive proof that we are upon the right track for the eradication of the morbific factor from the system. But while we complacently watch these good effects, does the average busy medical man consider the injurious action of such medication upon the circulatory and nervous system, which are already overtaxed in the process of growth, and by the detrimental influence of the disease. No matter how carefully we prescribe salicylic acid or sodium salicylate, the full benefit upon the disease is often not manifested unless they be administered in such doses as will exhibit the toxic effects of headache, tinnitus aurium, and depression of cardiac action. For this reason salicylic acid cannot be unreservedly employed in children. In view of the fact that this remedy has undoubtedly contributed to the fatal termination of cases under certain conditions, would it be advisable to still follow the advice of the Germans and administer large doses, especially to children.

In salicylic acid we have a drug of value; we might say a specific, but along with its merits we find well marked disadvantages; and the problem heretofore presenting itself for solution has been, how best to rid the remedy of its defect without imparing its efficacy. Owing to the irritating action of salicylic acid upon the mucous membrane of the stomach salicylate of sodium was proposed, but it was found to exhibit the same unpleasant after-effects in lesser degree.

The demand for a non-irritating and non-toxic derivative of salicylic acid brought out a number of preparations which pass unchanged through the stomach, and are disintegrated in the intestinal canal. In some of these, however, the salicylic acid is not present in sufficient proportion to exert its specific antirheumatic action, while in others it is combined with other substances which may have a deleterious effect. A remedy devoid of these defects has finally been found, which results from the action of acetic acid anhydrid upon salicylic acid, which has been given the name of aspirin. Aspirin undergoes little or no change in the stomach, but is decomposed in the small intestines, liberating the salicylic acid in a nascent state, leaving the acetic acid to combine with alkalies present to form the beneficial compounds of sodium and potassium acetate.

Repeated trials of sodium salicylate in the rheumatism of children, or "growing pains," have convinced the writer its efficacy to abort an attack, but have also emphasized some of its unpleasant after-effects. Further, it was noticed that it did not prevent cardiac complications or recurrences of the malady. After much search for something better, and after reading the observations of others with aspirin in the rheumatism of adult life, I was induced to try it in cases of "growing pains," with the results herewith appended, the cases being taken at random :

C. P., boy six years old, of healthy parentage and fully developed for his age. He had suffered from pains in the legs and arms with occasional muscular spasm every nlght for more than a week. The hygienic surroundings were good. He had been doctored with home remedies under the instructions of a "granny," but the pains became more excruciating each succeeding night. When first seen the temperature was slightly elevated. the skin dry, the pulse 120; the heart sounds muffled and faint. The child had no appetite and was peevish and cross from loss of sleep. The bowels were constipated. There was no indication of redness or swelling at any point along the extremities or around the joints. Sodium salicylate was prescribed in ten grain doses, thrice daily. After two days there was no pain at night, but headache, tinnitus aurium and appreciable deafness, and irritable stomach. The salicylate was discontinued in the morning with instructions that the patient take nothing but nourishment. Recurrence of the pains took place that night, but the deafness, tinnitus, and headache were better the next morning. I left five grain powders of aspirin to be given every three hours, and two cathartic granules to be taken at night. The father reported the next morning that the patient had slept well, and was free from pains; he had sweated freely, the bowels had moved, and he was playful and cheerful, Since then, three months ago, the child has enjoyed good health.

I. G., girl, 15 years old, stout, well developed, with every indication of complete puberty, except that she had never menstruated. Her previous health had always been good. She was first attacked with pain, heat, and swelling in the right ankle, which disappeared the next morning to reappear in the left wrist, where it remained for two days, but left that location and affected the left ankle. The same "granny" diagnosed the case as "growing pains," the difference in character from the boy's case being due, in her opinion, to the girl's age. A brother physician was called and pronounced the affection angioneurotic edema, depending upon the approaching menstrual period. Eight days after the onset I was called to see the girl during the absence of the other physician. My diagnosis was acute rheumatoid arthritis. (The family lived in rooms over a cellar half full of foul water.) The temperature was 101½; hot dry skin, headache, backache, constipation, no appetite, and general lassitude were present. I placed her on 15 grains of sodium salicylate immediately before each meal and at bedtime, with constitutional treatment of hematic hypophosphites, and a compound cathartic pill (improved U. S. P.) every night as necessary for the constipation. Forty-eight hours later much amelioration of the symptoms had occurred, but the patient complained of headache. tinnitus, and difficult hearing. I ordered the hypophosphites to be continued, but substituted aspirin for sodium salicylate. In forty-eight hours more the young lady remarked that she was well again. The hypophosphites were administered for some time, and she menstruated about one month after first consultation. There has been no recurrence of the pain and swelling. I am thoroughly convinced that from the onset the arthritis was of such severity that it would have required more of the salicylate to effect a cure than the patient could have tolerated.

MULTIPLE SCLEROSIS IN A CHILD FIVE YEARS OLD.*

By Philip F. Barbour, M.D.,
Louisville, Ky.

I DESIRE to report a case of tremor in a negro girl aged five years. I had seen her in my clinic a few days ago, and being interested in the case on account of its rarity, I took Doctor John J. Moren with me to see it and to make a more complete examination. We found that she had a tremor even when at rest and this was greatly increased when she attempted any motion, such as feeding herself or walking, and especially when excited. When she started to walk she would stand for a moment as if to get her balance, and would then walk somewhat like a person suffering from spastic paralysis. She seemed to be afraid to try to walk. The child was very much emaciated and marasmic, the legs and arms were attenuated, and there was some rigidity in the lower limbs. The patellar reflex was quite marked, but ankle clonus could not be obtained. Sensation seemed to be perfectly normal.

The mother said that the child had occasional attacks of vertigo; that when standing up she would sometimes have difficulty in maintaining her equilibrium. Romberg's symptom, however, was absent. At times the eyes were crossed, and rarely she would have vomiting spells two or three times a day, which seemed to bear no relation to the character of the food taken.

Speech was very indistinct: I could not understand any of the words she spoke, though the mother was able to interpret them. It sounded as if the trouble in enunciating came from the child's being tongue-tied, but the tongue could be put out perfectly normally. Mentally the child seemed deficient as compared with other children of the same age.

The history was that up until the age of three years the child was normal; then she had a spell of illness lasting three weeks; at the end of this illness she began to develop this palsy or mild form of tremor. There was no history in the family anywhere of a similar trouble. The brothers and sisters of the mother and father, and grandmother and grandfather of the child had no history of trouble similar to this. The mother was an alcoholic.

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* Reported to the Louisville Clinical Society.

The diagnosis of multiple sclerosis, most probably involving the cerebrum, was arrived at by exclusion. The only other diseases to be taken into consideration would be paralysis agitans, which the tremor of the child resembled but which we know is excluded by the age; and that rare form of disease, Friedreich's ataxia. From the latter, however, there were several differential symptoms, one of the most marked being that the patellar reflex is absent in Friedreich's ataxia and present in multiple sclerosis. The child could not speak well enough for us to determine exactly the nature of the speech defect. She could stoop and pick up an object without much difficulty.

We could not get the pupillary symptoms in the child, nor could we examine the fundus of the eye.

In this case there is no specific history; the mother has three children older, and younger all perfectly healthy, and the mother has never had any miscarriages.

DISCUSSION.

Dr. John J. Moren.—I saw the patient referred to by Doctor Barbour this afternoon for the first time. The doctor has given nearly all the symptoms. I tried to question the mother as to the illness which the child had suffered from the beginning, and she said there was a "drawing pain" in the epigastric region; that this was the beginning of the trouble, that it lasted two or three weeks, and from that time the tremor was noticed, that it gradually grew worse until she reported to Doctor Barbour's clinic. Since the child has been under treatment she has evidently been benefited.

One symptom that the doctor forgot to mention was that the child could retain its feces, but not its urine.

After examining the case I was under the impression that the diagnosis was between some cerebral lesion and multiple sclerosis, with more indications in favor of the latter. One symptom in favor of cerebral lesion was the character of the vomiting, which was quick, or projectile. The mother stated that the child felt a little sick after vomiting, which is also characteristic. The hasty micturition, specific gait, and rigidity observed in not only the upper but lower extremities favor a spinal cord lesion. One symptom, again, which favors cerebral lesion is that the tremor is worse when the child is excited. This afternoon the child was crying, and the tremor then was very marked. The tremor, however, is present whether the child is at rest or in motion.

Dr. S. G. Dabney.—I cannot offer any suggestions as to the diagnosis, except I think the ocular conditions might be examined a little more fully. The ophthalmoscope might determine whether there was an optic neuritis. Fifty per cent. of cases of brain tumors have optic neuritis at some time in their course. Many cases have choked disc. Observers are sometimes misled on this point because of the good vision of the patient; but very decided choked disc may exist with perfect vision.

PAN-AMERICAN NOTES.

The Exposition Hospital has had plenty of business since the grounds were opened. Over 1,600 patients have been treated, which indicates a large attendance at the fair. Visitors who may be taken ill are assured of the best of medical service and nursing.

An X-ray machine has been installed in Medical Director Park's office.

The infant incubators are attracting a great deal of attention. It is interesting to note the processes of development that can be witnessed here. Many a prematurely born child which would otherwise be lost is nurtured up to a vitality that makes it capable of independent life. As soon as a child is received it is given a bath in mustard-water, then 2 drops of brandy are placed in its mouth. Its body is next rubbed with alcohol and the child is placed in the incubator, which is kept at a temperature of 96° F. for four or five days. It is removed regularly day and night every hour and a half to be fed about 15 grams of nourishment with a nasal spoon.—*Buffalo Medical Journal.*

EDITORIAL COMMENTS

Observations on the X-ray in the Treatment of Fractures

Probably the most costly errors in medicine are errors of observation, and these may be as readily made by those who use the X-ray as by those who use the stethoscope, the ophthalmoscope or almost any other scientific appliance. Unfortunately, radioscopy gives no short cut to knowledge. The shadows that we obtain require experience and thought for their interpretation. It is perhaps difficult not to endeavor to see in hazy shadows just what we wish to see. Sometimes there may arise a tendency to misinterpret delicate shadings, and to regard them as proof of preconceived notions as to pathological conditions present. To arrive at trustworthy conclusions in obscure cases, requires, besides an unbiased mind, intimate knowledge of many facts.

In children and young adults centers of ossification and epiphysial lines must always be borne in mind. Again, anomalies due to anatomic reversions and the like may be encountered. Comparison with the sound side will generally eliminate this last source of error. In obscure conditions about the hip-joint in children we may go far astray if we be unfamiliar with the shadows cast seen by cartilage only partially ossified, under different intensities of illumination.

Again, unless pictures be taken from different aspects of a limb, fallacy is easy. A very crooked bone may show a straight projection in one plane. Patients are entitled to know the advantages and dangers of this aid to diagnosis, that they may accept it or not, as they see fit. It is certainly true that a bone seemingly set in a most artless fashion when viewed in the light of the X-ray may be functionally practically perfect. This may at times have a most important bearing from a medico-legal standpoint.

T.

The Klebs-Loeffler Bacillus in the Throats of Infants

In a brief communication entitled "On a Common Source of Diphtherial Infection and a Means of Dealing with It," (*British Medical Journal*, July 15, 1901), Dr. R. T. Hewlett, Bacteriologist to the Jenner Institute of Preventive Medicine, and Dr. H. Montague Murray, Senior Physician to the Victoria Hospital for Sick Children and co-Lecturer on Medicine at Charing Cross Hospital Medical School, analyze the results obtained on examination of the throats of 385 children under the age of fourteen for the Klebs-Loeffler bacillus. All of these children were admitted for operation or for some disease other than diphtheria. In 92 (24 per cent.) the pseudo-diphtheria bacillus was found; in 58 (15 per cent.) the Klebs-Loeffler.

Neglecting the presence of the pseudo-diphtheria bacillus, one out of every seven children, or rather one out of every seven sick children, is a source of infection.

They also conclude that the impression that the presence of children under two years of age in a ward increases the risk of diphtheria, is founded on fact; for of children under two years of age, one out of every five is a source of danger, whereas in children over that age, one out of every eight is.

It is clear that babies and young children are not the harmless and innocent creatures usually imagined, and that kissing and other artificial demonstrations of childish affection should be discouraged. It is, moreover, more important and perhaps more practicable that mouth cleaning in infants and teeth cleaning in young children should be insisted on more vigorously."

Lest these observations occasion too much alarm, they add that the bacillus was of only feeble virulence in the three cases in which tests in regard to virulence were made. T.

Uniformity of Technic in the Widal Reaction

Since there is little unanimity of opinion among clinical microscopists as to what constitutes a positive Widal reaction, Dr. R. C. Rosenweber (*American Medicine*, May 18, 1901) suggests that certain general rules be adopted, so that the terms "positive" and "negative" may have for all the same significance. His suggestions are:

1. The use of a uniform dilution.
2. A definite time-limit.
3. An agreement as to what constitutes a positive reaction.
4. The use of a culture of definite age, and a clear statement as to incubation or non-incubation.
5. A decision as to whether dried blood, fresh blood or serum is to be used.
6. A stated number of tests to be made in a given case.
7. To drop the terms "doubtful" and "pseudo" reaction.
8. Use of terms, "positive" and "negative" only.

Until a definition be agreed upon, it would seem most important that bacteriologists fully state in their reports the technic employed. The points especially to be mentioned are dilution, time limit, use of fresh or dried blood, and method of dilution. This will enable others to draw conclusions for themselves and will give reports permanent value; whereas the words "positive" and "negative" are meaningless at present to one unfamiliar with the exact technic of the examiner. T.

A TIMELY REMINDER.

The importance of keeping the baby's nursing bottle perfectly clean, especially in hot weather, is not sufficiently realized by mothers; many of them are not only careless but actually ignorant of the danger lying in unclean bottles, and we feel called upon to direct attention anew to this menace to infantile life. Mothers should be urged again and again to keep the bottle, also the nipple, perfectly clean.

A bottle having an opening in the lower end through which a stream of water may be run from the faucet, is the one that can be most easily cleaned and, therefore, the one that is most likely to be kept clean.

CORRESPONDENCE

New York, July 1, 1901.

Dear sir.—Some months ago a committee consisting of Dr. Reed, President of the American Medical Association; Dr. Bowditch, President of the Congress of American Physicians and Surgeons; Dr. Weir, President of the New York Academy of Medicine; Dr. Welch, of Johns-Hopkins University, and the undersigned secretary published an appeal to the American medical profession requesting contributions to the Virchow fund, which was established ten years ago in honor of Rudolf Virchow's seventieth birthday, which was reached October 13, 1891. The fund was created for the purpose of fostering biological, anthropological and general medical research. A large German committee, with national committees formed all over the globe, has undertaken to increase this fund in honor of the coming eightieth birthday of the great medical reformer.

Whatever contributions will be raised should be sent to Germany on the first day of September in order to be received and acknowledged by the central committee in due time. As our former notices may have been overlooked by such as are anxious to show their appreciation of the great master and to aid the cause represented by his life-long labors, we herewith repeat our appeal.

A. Jacobi,
Secretary,
110 West Thirty-fourth street.
New York.

SPINAL CURVATURE FROM WRONG SITTING POSITION.

Careful investigations made in various European cities have developed the startling fact that in most schools a large proportion of the students developed curvature of the spine as the result of the wrong attitudes assumed in sitting while at their studies. — *Modern Medicine — Dietetic and Hygienic Gazette.*

NEW YORK ACADEMY OF MEDICINE--SECTION ON PEDIATRICS.

Stated Meeting, January 10, 1901.

WILLIAM L. STOWELL, M.D., Chairman.

Congenital Stenosis, Spasmodic, of the Pylorus; Recovery.—Dr. THOMAS S. SOUTHWORTH reported a case of this kind occurring in a girl baby supposed to have been about two weeks premature On the third day after birth the baby had begun to vomit freely in from five to twenty minutes after each nursing. In spite of lavage and other measures the vomiting had persisted and was usually preceded by motions simulating gagging. At night the infant frequently became cold and blue, but presented no evidence of pulmonary atelectasis. By the ninth day it was evident that some milk was passing the pylorus. Lavage was given almost daily up to the fifteenth day, when the vomiting suddenly ceased and from that time on the infant retained her nursings well and gained rapidly in weight. Her subsequent career had been uneventful. Pyloric stenosis in this case had been diagnosticated for the following reasons: (1) The early occurrence and persistence of the vomiting uninfluenced by the usual methods for its relief; (2) the absence of any vestige of milk in the stools until the ninth day while the presence of green mucous stools excluded obstruction below the duodenum; (3) perfect digestion of the milk residue when it appeared in small quantities in the stools despite the continuance of the vomiting, which seemed to preclude the possibility that the vomiting was due to indigestion; (4) absence of constipation, temperature or any other symptom on the part of the mother which might cause her milk to disagree with the baby and the fact that two years before she had successfully nursed a child, and (5), the abrupt cessation of the vomiting pointing to a sudden relief of the exciting cause. Only a few recoveries from this condition had thus far been reported in the literature.

Dr. CHARLES HERMAN said that he had recently had such a case under observation at the Good Samaritan Dispensary. The patient was a rather small child, born after a normal labor. The vomiting had begun the third week and two weeks later the child had been brought to the dispensary. Examination had revealed a marked peristalsis in the epigastric region from left to right but of a very slow type. The shape of the peristaltic wave had been that of an hour glass. To the right of the median line he had been able at one time to feel a small, thickened mass which was supposed to be the contracting pylorus, but of this he could not be sure. The child had steadily lost weight for a considerable time and then a sudden change for the better had taken place without obvious cause. The infant was now 4 months old and seemed to be doing well. Apparently most of these cases were spasmodic, but certain of the autopsy records indicated that exceptionally there might be a true stenosis. The cause of the spasm was obscure. It had been supposed to be caused by hyperacidity but in his own case, as well as those reported by others, the acidity had been normal or even diminished. Spasm of the pylorus alone would not account for vomiting immediately after feeding because the normal pylorus is closed during the early part of digestion. It was probable that there was associated with the stenosis at the pylorus a lack of coördination in the muscular movement of other parts of the digestive tract. The speaker suggested that camphor might prove a useful antispasmodic in this class of cases and that it would be well where there was obstinate vomiting to withhold all food by the mouth and resort to rectal alimentation.

Dr. WALTER LESTER CARR said that the early reported cases had been looked upon as the result of a change in the structure of the muscles at the pylorus. It was questionable whether it was proper to call these cases "congenital." In the case just reported it seemed as if there was in addition to the spasmodic condition of the pylorus some condition leading to a reversal of peristalsis. There could be no doubt that a prolonged spasmodic state of the pylorus might result in a true stenosis. In his opinion the treatment should comprise relieving the stomach entirely of digestion and maintaining nutrition by rectal feeding.

A Case of Amaurotic Family Idiocy.—Dr. SARA WELT-KAKELS presented a child of 21 months, born in this city. There was no tuberculosis or syphilis in the family; the patient was the third child; from the twelfth to the sixteenth month the second child had convulsions and eventually died in them, the cause of death being stated to be meningitis, but the mother was positive that the symptoms were identical with those exhibited by the present case. The child under examination when first seen at the beginning of last year was fairly well nourished but she made no attempt to move the body or head; vision was very imperfect; the internal organs were normal; since last October she had had frequent tonic and clonic convulsions; the child was now greatly emaciated and the skin of the body and legs was thoroughly covered with hair; all of the muscles were rigid; the pupils were equal but reacted slowly to light; the macular region of both eyes showed a dark patch at the fovea; both optic nerves were very pale. Doctor Sachs, of this city, had really been the first to call attention to this disorder; it was probable that this disease was an affection of the entire nervous system including the cells and gray matter of the cord as well as presenting a typical picture of atrophy.

Dr. William Hirsch believes the cause to be a toxemia arising from the milk.

Duodenal Ulcer in an Infant of Ten Months.—Dr. Vanderpoel Adriance reported this case because of the age of the infant. The patient was a male infant in the Nursery and Child's Hospital; the family history was negative except that the mother was a hard drinker and irresponsible; on admission to the hospital the child had been very restless and had developed some gastrointestinal symptoms. The condition became steadily worse and the child cried constantly and placed his hands on the abdomen. After the first two weeks of rapid emaciation and another fortnight in which its condition had remained stationary a relapse had occurred and two pounds and one ounce had been lost in the week preceding death. Shortly before death there had been a number of bloody stools and some blood had been vomited. At the autopsy the duodenal ulcer had been found. It measured 2 by 1 cm., and had apparently nearly eaten through all of the coats of the duodenum. The liver was excessively fatty. These cases were exceedingly rare in literature. The youngest case heretofore reported was in a child of four years and the ulcer had developed after a burn.

Dr. D. Bovaird said that a search through the autopsy records of the New York Foundling Hospital, comprising some thousands of cases, failed to show a similar case.

Memoir of Dr. J. Henry Fruitnight.—Dr. Thomas S. Southworth presented this address.

Infantile Colic and Colic in Infants.—Dr. H. Illoway read a paper with this title. The term infantile colic, he said, had been applied to that form which occurred at short intervals during the first few months of life. In exceptional cases the attacks continued for fully three months and then ceased rather suddenly. One of the nursery traditions was that boys are more apt to be colicky than girls, and while he could not present any exact statistics on this point his own experience had been in accord with this popular notion. Flatulence could excite colic only when there was no extraordinary distention of the bowel. Colic was a symptom of many pathological states of the intestinal tract. The causes of infantile colic were: (1) Flatulence; (2) influences acting through the mother; (3) indigestion; (4) refrigeration. The reasons for flatulence in the infant might be found either in the infant or in the mother. The absence of pancreatic digestion in early infancy was perhaps one reason for the frequency of imperfect digestion at this time of life. It was a well known fact that slow or insufficient digestion results in the development of flatus. If the mother were constipated the infant was apt to be constipated and the mother's milk under these circumstances was apt to produce flatulence. The diet of the mother was also responsible for much flatulence in the infant. Another common cause was taking salts, senna and similar purgatives by the mother, and this too even when these drugs were not taken in sufficient quantity to produce any evacuation from the mother's bowel. Infantile colic sometimes arose from mental worry on the part of the mother or from suckling the infant immediately after sexual excitement. A case had been recorded in which a most obstinate colic in an infant had immediately subsided when the mother had sought the aid of a dentist and had a carious tooth extracted which had caused her much toothache. Probably the commonest cause was overfeeding, particularly too frequent nursing and feeding. This fact could not often be elicited unless the mother or nurse was sharply and closely questioned on this point. Another common error was the giving of too large a quantity of food, even though the latter were of the proper composition and given at suitable intervals. In comparatively rare instances infantile colic arose from a deficient supply of food. Refrigeration was an important element in the etiology of infantile colic and it was produced commonly by lying in a wet diaper, walking over a cold floor or exposure of the abdomen to a draft of cold air. The action of refrigeration in increasing peristalsis was taken advantage of in relieving infantile constipation. In cases of colic associated with grave pathological conditions one did not see the kicking of the legs observed in simple colic nor did the child cry for a few minutes with pain and then relax into a smile.

Treatment.—The treatment of infantile colic divided itself into: (1) The immediate relief of the pain; (2) removal of the cause. Perhaps one of the best methods of treatment was irrigation of the lower bowel with hot water and the external application of heat. In protracted cases he was opposed to the use of opiates, as infants soon become accustomed to their use and require rapidly increasing doses. In infantile colic he had found nothing superior to milk of assafetida freshly prepared.

The dose was one-third to one-half a teaspoonful followed, if necessary, by a second dose in fifteen or twenty minutes. It was given with a little fine sugar on a spoon and was nearly always taken readily by babies. It very quickly removes flatus. When the attack came on shortly after nursing it could often be averted by giving before the nursing some of this medicine or some warm fennel tea. He did not favor the administration of alkalies as a routine treatment believing that it interfered with digestion. The general treatment may be instituted in the removal of the cause had already been outlined in considering the etiology. Where it was evident that milk in any form disagrees it should be discontinued as soon as possible and meat broth and cereals substituted. Hiccough was sometimes a troublesome sequela and was most easily relieved by putting a few grains of fine sugar in the infant's mouth.

Dr. Southworth said that one cause of colic in the newly born was the passage of renal sand, as pointed out by Doctor Jacobi. Constipation was a common cause of the restlessness which mothers ordinarily ascribe to colic. The acidity of the urine in older children would give rise to very similar symptoms. He could not agree with the reader of the paper that the swallowing of air was not productive of wind colic. Many children thought to be colicky were really petted and spoiled, and cried whenever they were not perfectly satisfied with their surroundings and treatment. He always looked upon colic not so much as a disease as a reflection upon the methods of feeding. A colic in a nursing infant was usually controlled by properly regulating the mother's diet and the intervals of nursing, and insisted that the mother have plenty of out-door exercise. The examination of the stools was an important step in determining the cause of the intestinal disturbance. It was sometimes advantageous to administer digestive agents, particularly where there was difficulty in digesting proteids.

Dr. W. L. Stowell said that in a book on the diseases of children published in the latter part of the seventeenth century the recommendation was made that powdered oyster shell was useful in most cases of infantile colic. This recommendation was probably based on the assumption that infantile colic was usually dependent upon a state of hyperacidity. He also thought the swallowing of air was a matter of some importance. The children who actually swallow air and distend the stomach were those who are carelessly fed with a bottle having an improper nipple. Fennel tea was a very un-uncertain decoction and he was inclined to believe that the benefit supposed to be derived from it was really dependent upon the heat applied in this way internally.

BOOK REVIEWS.

THE ACUTE CONTAGIOUS DISEASES OF CHILDHOOD. By Marcus P. Hatfield, A.M., M.D., Professor Emeritus of Diseases of Children, University Medical School; Professor of Diseases of Children Northwestern University Medical School; Professor of Diseases of Children, Chicago Clinical School; Attending Physician Wesley Hospital. Pages, 142. Price $1 net. G. P. Engelhard & Co., 358–362 Dearborn street, Chicago. 1901.

This little volume lays no claim to being exhaustive or original; it does, however, set forth in a pleasing and fairly comprehensive manner the more recent views concerning the diseases which are considered. It may prove of especial value in refreshing the memory of those who cannot enter into a more detailed study of the subjects included, viz., scarlatina, measles, rotheln, mumps, whooping cough, chicken pox, smallpox and grip.

A SYLLABUS OF NEW REMEDIES AND THERAPEUTIC MEASURES; With Chemistry, Physical Appearance and Therapeutic Application. By J. W. Wainwright, M.D., Member of the American Medical Association, New York State Medical Association, United States Pharmacopeial Convention, 1900; American Chemical Society, etc. Pages, 229. Price $1 net. G. P. Engelhard & Co., 358–362 Dearborn street, Chicago, 1901.

This book is a most useful addendum to standard works on materia medica. It treats in an impartial manner of these new remedies which have proved of undoubted value and of which the chemistry is known or the exact formula given. The information has been gained as far as possible from disinterested sources and honestly compiled.

THE FEEDING OF INFANTS: Home Guide for Modifying Milk. By Joseph E. Winters, M D., Professor of Diseases of Children, Cornell University Medical College. 8vo, pp. 47. E. P, Dutton & Co,, New York,

This little book is intended primarily to instruct mothers and reveals how to modify milk for healthy infants. It points out the composition of "top milk" and contains a number of easy formulas for modifying the same according to the age of the child. The author considers that Meigs' discovery when fully appreciated by physicians and mothers will be the means of saving more lives than any other discovery made by medical science during the nineteenth century.

ROCKEFELLER'S GIFT.

It was but a short time ago that we pointed out that there was no direction in which the superfluous wealth of philanthropic men could be so well bestowed as in providing for scientific research. Mr. John D. Rockefeller's gift of $200,000 for the establishment of an Institute of Medical Research is probably the wisest and best manner of disposing of a princely sum that has ever been devised The arduous and unremunerative work of the experimenter in medico-surgical science, nowadays, can only be seen at its best when, secure from the carking cares of bread-winning, he may devote all his efforts to his labors. The worker must, however, receive more than a pittance large enough for him to live upon, for he is compelled to use complicated and expensive apparatus and chemicals.

Our science has so far advanced that we feel we are, at the beginning of this century, upon the threshold of discoveries that may even dwarf those that have gone before, great as they have been. We feel certain that the gift of a few millions to the cause of laboratory investigations will prove an investment that may at any time result in interest so noble and grand that it may be a hundred-fold reward to those who have been the means of producing it. Cancer, consumption, syphilis and a host of other scourges may be among those which the science of the next few years may learn to hold in check, and we honestly believe that a search for the means of curing a fatal and widespread disease is of greater practical value, of more human interest, than the search after the North Pole, upon which so many millions and so many lives have been spent.—*Intern. Jour. of Surg.*

ABSTRACTS

THREE VARIETIES OF MEMBRANOUS ANGINAS PRODUCED BY MICRO-ORGANISMS OTHER THAN THE KLEBS-LOEFFLER BACILLUS AND THEIR SANITARY SIGNIFICANCE.

William G. Bissell (*Buffalo Med. Jour.*, Dec., 1900) says: Prior to the inauguration of the more exact microscopic methods for the determination of a diphtheritic infection there were several varieties of pseudomembranous inflammation of the tonsils classed as "diphtheria" which, by recent research, have been conclusively demonstrated to be produced by micro-organisms other than the Klebs-Loeffler bacillus. The appearance of the membranes in these conditions is not dissimilar to that produced by the Klebs-Loeffler bacillus, and the constitutional disturbance may be such as not to be capable of differentiation from that usually attending a severe case of diphtheria.

The micro-organisms in question are the streptococcus pyogenes, micrococcus of sputum septicemia, which belongs to the bacteria, and oidium albicans, a member of the fungi group. A Klebs-Loeffler infection has been shown to be capable of wide variances in its clinical manifestations, and these organisms can, likewise, produce illness having a clinical picture varying from the most mild sore throat to a fatal disease.

The author draws the following conclusions from the several cases reported.

1. The streptococcus pyogenes and the micrococcus of sputum septicemia can produce membranous anginas, accompanied by physical disturbances sufficient to result in death.

2. The oidium albicans produces pseudo-membranous exudates easily mistaken for a Klebs-Loeffler inflammation.

3. The only possible means of determining a Klebs-Loeffler infection is by microscopic methods.

4. From the sanitary standpoint as regards quarantine, anginas due to the streptococcus pyogenes, micrococcus of sputum septicemia and the oidium albicans, require little consideration.

HOME STUDY FOR CHILDREN.

The action of the Washington authorities in forbidding study after school hours has provoked considerable discussion in educational circles and the medical profession has been frequently appealed to for a decision regarding the justice of the above ruling. This is especially noticeable in Massachusetts, where the discussion has waxed warm and somewhat personal.

This subject is of great importance and the discussion upon it is timely and proper, for the fact is quite generally admitted that the ideal method of education as applied to young children is yet to be discovered, and that in very many cases marked and permanent injury has resulted from the methods now in vogue.

During the past generation conditions have changed and if reports can be credited knowledge has been boiled down and classified and is now more easily assimilated and much better retained. Yet at the same time the curriculum is more extensive, the hours of study longer and the courses of instruction more elaborate than ever before. This being the case, greater and more varied amounts of labor are placed upon the child during the earlier periods of its education when the subject is least able to sustain the burden. Physiologists are generally agreed that the ideal life of the child is a sort of vegetative one, in which air, sunshine and physical exercise play an important and,in fact, an almost exclusive role, and where mental development is, in a degree, incidental and supplementary. But under existing rules and regulations, three or four-fifths of the working hours are passed in-doors in the mental and sedentary pursuits.

Some radical change is particularly desirable when we consider the present conditions and apparent demands of modern life. The child of the present day lives in a miniature social world of her own, which grows larger from year to year. She has her parties, music and dancing lessons and other evening entertainments which are considered real obligations that are to fit her for the serious social duties of life, but which, at the same time sap her vitality, derange her nervous system and render study a difficult and unwelcome task. Recognizing therefore the emphatic demands of society there remains but a single alternative—to shorten the study hours and with some little regard for the only proper foundation of future health and happiness, give the child a chance to grow.—Editorial, *New England Medical Monthly.*

TUBERCULIN IN DIAGNOSIS OF TUBERCULOSIS IN EARLY INFANCY.

Mettetal (*Archives de Medecine des Enfants*, October, 1900) gives the results of a study of 74 infants who were given the injection of tuberculin. The writer speaks of the difficulty of diagnosis of tuberculous infants; those physical and functional signs which are so pronounced in adults are often absent. Young infants with tuberculosis often die with a marked diarrhea, vomiting and convulsions. The tuberculosis is often present in the form of granuloma. It is in these obscure cases that tuberculin is of such signal value. It is dangerous in two classes of cases—those which are greatly emaciated and have diarrhea, and those in which the temperature is slightly below normal. The reaction may be dangerous in those who have a temperature considerably above normal. As a rule, tuberculin injections are better borne by children than by adults, and the reaction is, as a rule, more certain. The tolerance established by repeated injections is much more rapid than in adults. As a rule one-tenth of a milligram is sufficient in an infant to obtain an elevation of temperature of from 1° to 2.5° C. Of the 74 cases, 18 came to autopsy; of these, six did not react to the tuberculin; six died of gastroenteritis, one complicated by bronchitis; one died of rickets, and another of rickets complicated by syphilis. Of the twelve cases which reacted, all were found to have tuberculosis in some form, some involving the meninges, others the peritoneum, and others with a generalized tuberculosis. Of the cases in which no autopsy was performed, 32 did not react to tuberculin and 24 did.—*Medicine*, Dec., 1900.

VARIABILITY OF TUBERCLE BACILLI.

1. Tubercle bacilli are not always so easy to demonstrate as is commonly believed, even though present in large numbers.

2. The fuchsin solutions, like those of other dyes, can not at all times be absolutely depended upon.

3. Tubercle bacilli from different patients, and from the same patient at different times, will not invariably stain by one method.

4. The bacilli exhibiting these varying staining properties are genuine tubercle bacilli, and not other species of acid resisting germs.

5. The staining variations probably depend on physical and chemical changes in the bacterial substance, instituted either by antitoxic action or by the products of associated organisms, or by a combination of both.

6. In the absence of undemonstrable tubercle bacilli, where physical signs of tuberculosis exist, a prompt diagnosis of that disease should be confidently made in the interest of the patient, and no valuable time be lost in waiting for typical bacilli to appear.—C. RAMUS, *Jour. Amer. Med Soc.*, June 15, 1901.

EMPYEMA IN CHILDREN.

FLOYD M. CRANDALL (*International Med. Mag.*, Oct., 1900) says:

Few diseases of childhood present greater difficulties in diagnosis than do certain cases of empyema.

The signs of fluid in the chest of a small child are too often interpreted as indicative of unresolved lung consolidation and death results from lack of proper treatment. Many cases of so-called chronic pneumonia are nothing more or less than empyema.

When a diagnosis of pneumonia has been made and fluid has subsequently been found, the original diagnosis has sometimes been very unjustly discredited. It should never be forgotten that an empyema in a young child has probably been preceded by a pneumonia.

The signs obtained by auscultation are especially difficult to interpret. The normal respiratory sounds are so loud and the pleural cavity so small that a moderate amount of fluid may cause but little change in those sounds. When the quantity of fluid is considerable a distinct bronchial sound may be obtained.

A thin layer of fluid surrounding the lower portion of the lung will not interfere with the respiratory or voice sounds. The fremitus and voice sounds are frequently but little diminished.

Percussion renders, perhaps, more aid in making the diagnosis than any other means of examination. Mild percussion elicits dulness, while peculiar resistance offered by fluid is very characteristic. Flatness, or, even dullness from top to bottom upon one side of the chest is extremely suggestive of fluid. Displacement of the apex of the heart, when present is a very important sign and easy to determine. It is distinctive however, only with rather large effusions on the left side.

The diagnosis of pleuritic effusion having been made, exploratory puncture afords the only means of determining the character of the fluid. Without the needle no experience or diagnostic skill can say with certainty that the fluid hidden within the chest is pus or serum.

The danger of infecting the fluid or of causing a serous exudation to become purulent is absolutely *nil* if an antiseptic needle be used with proper precautions.

As to the treatment of empyema, opinions differ considerably regarding details and technique, but there is no difference of opinion among competent men regarding the essential measures to be adopted. Free incision with drainage is universally regarded as the only efficient treatment.

Some surgeons of large experience advocate excision of ribs in every case and even advise a counter incision and thorough drainage. If performed early, however, simple incision has proved, in the experience of many competent operators, a perfectly efficient means of effecting a cure.

GASTRIC CANCER.

The methods of diagnosis of gastric cancer are noticed by MacFarlane. The general constitutional symptoms are not at all pathognomic of malignant disease of the stomach, but are characteristic of cancerous growths anywhere. The local vary with the extent of the disease and the mechanical depend upon the position of the disease in the stomach. The loss of appetite and the absence of hydrochloric acid indicate catarrhal conditions of the stomach due to the growth and its toxins, but where the cancer is developed on the basis of an ulcer and is limited, hydrochloric acid is not usually absent. Lactic acid exists in the absence of free HCl and characteristic coffee-ground hemorrhage is diagnostic. The mechanical signs are the result of obstruction at the pylorus or cardia. The tumor, when it exists, of course, is important and its motility is diagnostic. Pain is rarely absent. Three symptoms are of special significance: the absence of hydrochloric acid, presence of lactic acid and the occurrence of motor disturbances. The question arises, how can the general practitioner who sees the case at its very inception make a probable diagnosis of malignancy? He could easily determine disturbances of nutrition by finding food two hours after an Ewald test breakfast or six hours after a Riegel test meal. If the patient states that he has vomited food taken the day before, the passage of the stomach tube is not even necessary. This does not prove, of course, that the patient has cancer, but it does prove that one has to do with no simple indigestion or dyspepsia and that the case should be given a thorough examination.—*Albany Med. Annals.—Journal A. M, A.*

WHEY-CREAM MODIFICATIONS IN INFANT FEEDING.

F. W. White and M. Ladd (*Philadelphia Medical Journal*, Feb. 2, 1901), from their work in this line, have arrived at the following conclusions:

1. By the use of whey as a diluent of creams of various strengths they are able to modify cow's milk so that its proportions of caseinogen and whey proteids will closely correspond to the proportions present in human milk. They therefore render it much more digestible and suitable for infant feeding.

2. The best temperature for destroying the rennet enzyme in whey is 65.5° C. Whey or whey mixtures should not be heated above 69.3° C. in order to avoid the coagulation of the whey proteids. The amount of whey proteids in the whey obtained by these observers was 1 per cent., while in the analysis of the whole milk approximately three-fourths of total proteid was caseinogen and one-fourth was whey proteids.

3. On the basis of these analyses they were able to obtain whey cream mixtures, with a maximum of 0.90 per cent. and a minimum of 0.25 per cent. of whey proteids in combination with percentages of caseinogen varying from 0.25 to 1; of fats, from 1 to 4 per cent; of milk-sugar from 4 to 7 per cent.

4. The emulsion of fat in whey, barley-water, gravity cream and centrifugal cream mixtures was the same, both in its macroscopic and microscopic appearances. The combination of heat and transportation, such as sometimes occurs in hot weather, partially destroys the emulsion in all forms of modified milk, but this disturbance can be prevented by the simple precaution of keeping the milk cool during delivery.

5. Whey cream mixtures yield a much finer, less bulky and more digestible coagulum than plain modified mixture with the same total proteids; the coagulum is equalled in fineness only by that of barley-water mixtures. The coagulum yielded by gravity cream mixtures and centrifugal cream mixtures is the same in character. — *Medical Age*, February 25, 1901.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics
Under the direction of George Alexander Saxe, M.D.

DIETSKAYA MEDITSINA, 1901, No2.

1. **On the Question as to the Prevention of Diphtheria.**—A Report of the Medical Commission of the Moscow Society of Pediatrists. The commission, as the result of its investigation concluded that the preventive measures against diphtheria should be based upon the following principles: First, Loeffler bacillus is the cause of diphtheria; it may produce the disease in whatever condition and wherever it is found, provided the circumstances are favorable to its development, and only in its absence are we safe from the disease. Second. In practice these favorable circumstances occur quite rarely, for one person out of ten or even one out of thirty will contract the disease when exposed to infection. Third. There is reason to suppose that the most virulent bacilli are those which are found in patients while they are ill with diphtheria, but it is impossible to distinguish persons who become infected with bacilli directly from patients and from persons whose infection may be traced to healthy carriers of the germ. Fourth, it is impossible to judge accurately in each individual case the virulence of the germ for other people, or to determine whether circumstances favor infection.

Destruction of Loeffler's bacillus is therefore the only way of preventing the disease. This may be accomplished by disinfection, except as regards the bacilli that are found in the throat. A number of remedies have been tried for the purpose of destroying the germs of diphtheria in throats of patients, but until now without satisfactory results. Properly-conducted preventive measures should include a bacterial examination of the throat in certain groups of children, repeated at intervals in order to remove and isolate from these groups the carriers of the bacillus. This applies particularly to children's hospitals, asylums, and similar institutions. It is very difficult indeed to carry out this measure, and the strict enforcement of the rule for isolation gives rise to a great deal of trouble. In some hospitals in Germany and France, and in New York even in private houses, the isolation of carriers of diphtheritic infection is obligatory. It is difficult to judge the effect of isolation in the absence of reports from the before-mentioned places, but the sanitary report of New York City for the past year shows the diminution of the mortality to the extent of 40 per cent.; no distinction,however, is made between diminution due to the antitoxin and that due to isolation. It cannot be emphasized too strongly how important is an early diagnosis and a speedy removal of the patient in a "larvated" form of diphtheria. Convalescents must be kept isolated until all germs disappear from the throat. As regards healthy carriers of the infection, their isolation must be conditional, that is, it must depend upon harm which may result from the presence of germs in their throats. Children who will return after convalesence to places where they will expose a number of other children to the infection must be kept isolated until all the bacilli disappear. Healthy persons who carry the infection must be isolated only when they are living amidst children who are predisposed to the disease. Such persons, if they cannot be isolated, must use separate eating utensils, and must avoid intimate contact with the children.

2. **A Case of Primary Diphtheria of the Skin and the Genitals.** By Dr. N. Lapiner.—The patient was a girl aged seven years, in whose family there had been three children with tonsillar diphtheria within two weeks before the onset of the present illness. On the skin of the right labium there was a grayish, slightly raised membrane. The labium was swollen and edematous, and the membranous deposit was surrounded by redness. A smaller membrane was found on the opposite labium. On separating the labia the membranous exudate was seen covering the entire inner surface of the labia majora and the labia minora, the clitoris, and the vestibule. The inguinal glands were markedly enlarged. There was slight fever, and no signs of diphtheria in the throat. One thousand units of antitoxin were injected, and applications of 1.4000 bichloride solution ordered, to be followed by the use of an ointment of 10 per cent. orthoform on cotton between the labia. Severe pain was experienced on micturition, and there was a yellowish crust around the urethral orifice. The membranous exudate disappeared in a few days. Compresses of lead water and injections of permanganate of potassium 1:4000 were then used until all signs of the inflammation were removed. No abrasions were found in the skin of the labia, and the author does not think that such abrasions are necessary in order to produce a local infection with diphtheria bacilli.

3. **Brief Report of the Activity of the Surgical Department of the St. Vladimir City Hospital for Children in Moscow.** By Dr. T. P. Krasnobajeef —This report, which covers the year 1889, gives a summary of the cases treated during this period. There were performed in this hospital 264 operations during 1889. The number of fatal cases was 28.

4. **A Lacerated Wound with Splintering of the Bone in the Right Subraorbital Region—Trephining—Recovery.** By Dr. N. A. Steinhaus.—The child was 5 years old, and had received a kick from a horse upon the supraorbital region. The bone was shattered, and the brain was pulsating through the wound, which was 5 cm. long and 3 cm. wide, about a fingersbreadth above the edge of the orbit. On examination it was found that the pieces of bone were pushed into the cranial cavity, whence projected the pulsating mass of brain tissue. The superficial wound and the opening in the skull were enlarged and the splinters of bone removed as completely as possible. Four fragments from 1 to 3 cm. in diameter were placed in normal salt solution, and several pieces that hung on by remains of periosteum were replaced at the edge of the cranial opening. A portion of protruding brain tissue, weighing about 1 gramme, was removed and the defect in the cranium was closed by a skin and muscle

flap taken from the forehead. After the hemorrhage had been arrested the wound was closed with six sutures. The wound healed by first intention, and the child recovered in ten days. Nothing abnormal was noted at the site of the operation except a slight pulsation and the usual soft spot.

5. **A Gunshot Wound in the Mouth.** By. N. A. Steinhaus.—A girl of 11 was accidentally shot in the mouth by a relative who was handling a gun incautiously. The entire face was burnt with powder, the right cheek was swollen and the lower lip torn in two. The wound was about 1 cm. deep and covered with a grayish white deposit. In the upper and lower jaws a number of teeth had been knocked out. The tongue was split in twain along the middle, the wound penetrating through the entire thickness of the lingual muscles down to the bottom of the mouth. Splinters of teeth were found in this wound; it was sutured after disinfection and removal of the fragments of bone; the wounds healed in four weeks by granulation; three weeks later the patient was again admitted complaining of pain in the throat and inability to turn her head. On the posterior wall of the pharynx, at the level of the root of the tongue, there was a painful, soft swelling; the swelling was incised and was found to contain pieces of the lower jaw with fragments of a leaden bullet; the swelling gradually disappeared, and examination with X-rays showed that there were no more foreign bodies in the region.

6. **A Case of Erythema Nodosum Simulating Disease of the Brain.** By Dr. M. G. Lazareff.—A boy of 4 years was seized suddenly with fever, delirium and vomiting; seen on the next day, he showed a temperature of 40.4, a pulse of 156 and was unconscious. The sclerotics were hyperemic and the pupils reacted slowly. On the anterior surface of the legs there were the characteristic red swellings of erythema nodosum; there was also constipation and scanty urine; the symptoms receded during the next two days, and gradually the child's condition became normal except that the eruption continued. The onset of the disease simulated meningitis.

7. **A Case of Tuberculous Pericarditis in a Boy of 11 years—Incision of the Pericardial Sac; Death; Autopsy.** By Dr. A. A. Kissjel.

8. **A Case of Intestinal Hemorrhage in a Boy of 12 Years.** By Dr. M. Lapine.

9. **A Case of Paralytic Chorea with Severe Cerebral Symptoms.** By Dr. M. Lapine.

PEDIATRIA, February, 1901.

1. **Alterations in the Gastrointestinal Tract of Young Dogs Rendered Atrophic by Insufficient, Injurious or Irregular Feeding.**—By Dr. Salvatore Quatrocchi. The author found by insufficient, irregular or injurious feeding a progressive disease could be produced in little dogs ,which is characterized by a loss in weight amounting to a quarter or more of the total body-weight. This morbid condition is very similar to atrophy in

infants and may be therefore styled experimental atrophy. It runs its course, as a rule, terminating fatally in from twenty to twenty-five days. In one series of dogs, belonging to a smaller breed, the pups were subjected to the experimental atrophy at the age of twelve days and died within eight to twelve days, showing a peculiar predisposition to the disease. In another series (of larger dogs) the smallest of them died sooner than the rest. The fact that athrepsia in children lasts longer is explained by the interference of treatment and by the inconstancy of the cause of the disease—improper feeding. The intestine of children is 7 m. in length, while in young dogs it is about 5 m. long,thus giving a smaller surface for the decomposition of food in dogs.

The lesions observed in these dogs consisted of slight inflammatory changes, accompanied by a certain degree of atrophy of the intestinal wall. Fede found similar lesions in infants with atrophy. The introduction of poisonous food was followed by a purely primary atrophy, thus reproducing experimentally the primary atrophy of infants described by Fede.

In addition to the loss in weight, young dogs subjected to a scanty diet of sterilized milk showed a series of diarrheal and dyspeptic symptoms because cow's milk is different from the milk of the bitch. Thus, slight lesions of the gastrointestinal tract, under certain conditions, may give rise to the gravest disturbances of the general health. This is especially so in infancy in which growth and development are conditions of necessity to life.

2. **Toxemic Nephritis in a Child aged Three and a Half Years.** By Dr. Antonio Iovane.—The child had been nursed by its mother until 8 months of age and then by another woman, who, a few days later, was suspected of syphilitic infection. Ten days after he had begun to nurse from this woman, the child showed a general eruption which lasted but one day; yet since that time, according to his mother, he never had been well and had suffered from fever and intestinal disturbances almost constantly. During the last year he became very much emaciated and his abdomen became swollen, the skin jaundiced,and he had a febrile attack. A few days before the child entered the hospital his eyelids and his lower extremities also became swollen and edematous. The urine contained albumen, hyalin casts, epithelium and blood-cells; his circulation was feeble, and his limbs became gradually colder. In spite of vigorous stimulation the child died within thirty-six hours after admission. The clinical diagnosis was acute nephritis, The autopsy showed markedly thickened pericardium adherent to the visceral layer throughout most of extent, the pericardial cavity containing a little pus. The capsule of the kidney was adherent to the cortex which was slightly darker than normal. The liver was enlarged and fatty, the spleen soft and congested. On microscopic examination the convoluted tubules were found to be dilated, the epithelium in them was swollen and opaque and in some of them it was totally destroyed. Hyaline changes in the malpigian tufts and cylinders in the cortical tubules were also found. No exudate and no connective tissue changes were found in the kidneys. There was therefore a nephritis of toxic origin and a pericarditis.

PEDIATRICS

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VOL. XII. AUGUST 1st, 1901. No. 3

ORIGINAL ARTICLES

CLINICAL DEMONSTRATIONS AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

By AUGUSTUS CAILLÉ, M.D.

CASE 1.—**Broncho-Pneumonia with Complicating Meningitis.**

Very recently I demonstrated to the colleagues a case of pneumonia with meningeal symptoms (tremor, contracted muscles, vomiting), in which on puncture of the spinal canal we withdrew a clear and sterile fluid, and the child has since made a rapid and uneventful recovery. Today I present to you a baby with true meningitis complicating broncho-pneumonia. In addition to the pathognomonic signs on auscultation and percussion you will observe that the child is stiff from a rigid contraction of all the muscles. The head is drawn back, the jaw is firmly set and the vaso-motor disturbance (known as *tâche meningitique*) is present. We will now puncture the spine and you will notice that the fluid removed is quite cloudy.

Recovery from any variety of meningitis other than the tuberculous form is possible. In addition to the dietetic and hydrotherapeutic measures, we will administer Credé's ointment by inunction with the hope of aiding nature in destroying and eliminating the poison in the system. Credé's ointment is a 15 per cent. silver ointment and is believed to have some virtue in overcoming streptococcus sepsis. One-half to 1 dram rubbed into the skin three times a day can do no harm. The prognosis in this case, the child being only 7 months old, is unfavorable.

(The child subsequently died, and the autopsy confirmed the diagnosis).

Case 2.—**Chronic Enlargement of Tonsils.**

This girl of 4 years has tonsils so large that they are in close opposition. The mother states that the child snores, sleeps with its mouth open, has a nasal voice and a constant cough.

We will remove the tonsils in the usual way with a tonsillotome and advise the parent to wash the nasopharynx by pouring a spoonful of salt water into each nostril every two hours for the next twenty-four hours.

Nothing is easier than to take a ring-shaped tonsillotome and catch the tonsil that protrudes and cut it off; but occasionally, and very often in fact, you will find the following conditions present: the anterior pillar overlaps the tonsil in such a way that the bulk of the tonsil is entirely hidden behind the soft palate and you cannot engage your knife sufficiently to take it out. That was particularly the case here, and when I introduced my tonsillotome I exerted a slight lateral pressure and in that way I succeeded in engaging the tonsil sufficiently to remove it, but in some cases you cannot, if you are ever so expert, get the tonsil into the knife. In such instance you will have to take a blunt hook and insinuate it beneath the soft anterior pillar and loosen up the adhesions, after which (in one or two sittings) the tonsil becomes free and can be removed without difficulty.

Regarding hemorrhage I have this to say: if you endeavor to remove every bit of the tonsil and exert lateral pressure with your tonsillotome and perhaps with your thumb on the outside of the neck you may cut so deep as to injure one of the larger vessels and get profuse hemorrhage. If you remove three-quarters of the tonsils, leaving somewhat of a stump, you will not be liable to get profuse hemorrhage. In an emergency you could run your thumb back over the stump and compress it without much difficulty, or you might grasp the stump with a forceps. I have never been alarmed by a hemorrhage except on two occasions and then I had "bleeders" to deal with.

Case 3.—**Cirrhosis of the Liver (Hypertrophic Stage).**

This boy has fluid in his abdomen and his diaphragm and heart are so much displaced that the impulse of the heart is seen and felt near the clavicle. He has edema at the ankles and you can hear moist râles over the right chest. He gives no history of importance, but there is a trace of albumin in his urine, also bile pigments, but no sugar.

We will now tap the abdomen; the fluid which we remove has a greenish tint; about three pints of fluid have now been removed; the abdominal walls are quite lax, and on careful palpation you can make out a very large liver the lower border of which reaches to the umbilicus. The obstruction to the circulation is evidently in the liver. Hepatic cirrhosis is not absolutely rare in children and may be due to an infection of the organ from the gastroenteric tract or to hereditary syphilis. The boy will be admitted to the babies' wards for further observation and treatment.

Case 4.—**Subacute Nephritis with Anasarca and Ascites.**

This child is 2 years old and has been sick four weeks. In the ordinary pot-belly of rachitic children you get the tympanic gut sound on percussion. Here there is fluid in the abdomen, and a careful examination is necessary to determine the true origin of the trouble. We have to examine the urine in the first place. This has been done and we have positive evidence of nephritis. The mother states that the child was quite sick with tonsillitis four weeks ago. Assuming that the tonsillitis was the first illness and the kidney affection was secondary to tonsillitis, you have a clear clinical picture with the above diagnosis.

Case 5.—**Skin Tuberculosis; Tuberculin Reaction; Subsequent Meningitis; Death; Autopsy.**

Our last case this morning is one of great interest. The girl on the table is 5 years old. Her ailment is tuberculous meningitis, and she is moribund.

She came under our observation ten weeks ago with a skin lesion in the shape of reddish-brown plaques on the hands, forearm and legs and a deep infiltration and ulceration on the right leg near the ankle. Her general health was excellent, appetite good, temperature normal, with no evidence of internal disease on careful clinical examination, and no enlarged glands. After four or five weeks of local treatment combined with the internal administration of mercury and iodide of potassium, which appeared to have no special influence on the skin, syphilis was ruled out of our consideration and tuberculosis of the skin was diagnosed. A test injection of tuberculin (1 mg.) was made. Four hours after this injection the temperature had risen from the normal to 105° F. Creosote was now administered in ½ drop doses three times a day in emulsion and the ulcer was curetted and dressed with balsam of Peru. Tubercle bacilli were not found in the scrapings but the skin began to heal and in two weeks more the ulcer was about healed and the child was sent home. She was brought to the dispensary once a week for four weeks and was apparently in excellent health. Two weeks ago she lost her appetite and acted in a languid manner. Ten days ago she was readmitted to the babies' wards with symptoms of tuberculous meningitis. A spinal puncture showed an abundance of clear fluid in which the tubercle bacilli were not found with the microscope.

Postscript.—She continued to grow worse, was finally comatose; retained no nourishment, became convulsed, and died May 25th. The diagnosis of tuberculous meningitis was confirmed by autopsy and a miliary tuberculosis was found in other organs.

DISCUSSION ON DIPHTHERIA.

In children there are three important forms of pseudomembranous inflammation of the throat. In the text-books they are designated as tonsillitis, diphtheria and pseudo-diphtheria or false diphtheria. We have all been taught that we can differentiate clinically between tonsillitis and diphtheria, but the older we become the more we appreciate that this is impossible. An inflammation of the tonsils may show a punctate pseudo-membrane at the first inspection and twenty-four hours later the tonsils, soft palate and pharynx may be covered with a dense diphtheritic deposit with or without croupy symptoms. From such and similar observations we must arrive at the conclusion that the strict clinical differentiation between tonsillitis and diphtheria is impossible and in all places in which diphtheria is endemic tonsillitis in a young child should be looked upon with suspicion.

Regarding the two forms of diphtheria the bacteriologist tells us that when he finds Klebs-Loeffler bacilli in the throat we have true diphtheria. Then we are told that in Klebs-Loeffler or true diphtheria the Behring antitoxin is a specific but that it has no favorable influence upon pseudo-diphtheria. What is the result of this? Colleagues who have great respect for the science of bacteriology—and I am one of them—but who fail to recognize the danger of waiting—and I am not one of those—will, if they have a case of diphtheria to handle, send a culture to the laboratory'and wait twenty-four and sometimes forty-eight hours until they get a report. In the meantime they will fail to introduce into the system of that sick child the really valuable agent that we have—antitoxin. They will temporize by giving some inert drug which will do no good; then they will receive a report confirming the presence of Klebs-Loeffler bacillus and they will say: "Now is the time for the antitoxin." They will frequently be disappointed because of the late administration of antitoxin and lose confidence in a valuable specific remedy.

Another point is this; although the bacteriologist speaks of pseudo-diphtheria in contradistinction to true diphtheria, the so-called false diphtheria requires none the less urgent treatment. The name is a thoroughly bad one—it misleads us. If the report comes pseudo-diphtheria it does not mean fair sailing; on the contrary, we may have a serious form of the disease to handle. In all large cities, as a rule, we seldom see a clear Klebs-Loeffler diphtheria or a clear coccus diphtheria, but the vast majority of the cases are mixed infections; they contain both germs and therefore it is a practical rule for practical physicians when they have a diphtheritic sore throat not to wait for the bacteriological examination and not to sit up nights and try to reason out whether it is true or false diphtheria, but to give antitoxin at once. It will do no harm, and in the vast majority of cases the diphtheria will be of that variety in which antitoxin is a curative agent. In the present state of our knowledge if you have a case of diphtheritic sore throat to handle do not wait for a laboratory report but employ your antitoxin; you will save more lives by so doing.

Regarding the antitoxin: The immunizing dose is from 200 to 500 units, the curative dose from 2,000 to 3,000 units, and the best preparation is that which comes from a reliable source, which has the greatest number of "units" in the smallest quantity of serum. Therefore, a practical rule is to give the strongest serum from a reliable source and to inject 2,000 to 3,000 units (2,000 in ordinary cases and 3,000 in croup cases). In addition to this specific treatment (and I need not say a word in its defence because it has been accepted by the entire civilized world) we have local treatment. The local treatment of the nasopharynx in order to be well directed must be mild. If you swab a diphtheritic throat with nitrate of silver solution or other caustics you do harm; you open new sites for diphtheritic infection by injury to the mucous membranes. My own management of the naso-pharynx is to take some solution that is non-irritating and pour it through the nose by means of a spoon, unless both nostrils are filled with membrane, when syringing must be resorted to. By washing out the nasopharynx you get a mechanical antisepsis. Salt-water, lime-water, boric acid solution (2 per cent.), mercuric bichloride 1 to 10,000, ichthyol (2 per cent.) may be used. High fever may be reduced by sponge and tub baths. A liquid diet, including fruit juice, should be given; also alcohol in some form as a stimulant.

REDUCED BIRTH-RATE.

A French statistician says that in spite of the increase of population in various countries the rate of increase is steadily diminishing. Austria is really little better than France in this respect, while Germany, which shows the largest increase of European nations, has a declining birth-rate. The United States, with its increase of 14,000,000 in the last decade, has the largest decline of birth-rate and would surely show signs of retrogression but for the steady volume of emigration. It is the old story over again of lessening of increase in accordance with the degree of luxury in civilization.—*American Medicine.*

HIGH TEMPERATURES IN SCARLATINA AND MEASLES, AS RELATED TO GASTROINTESTINAL TOXINS AND FERMENTATION.

By ARTHUR DEVOE, M.D.,
Seattle, Wash.

THAT the high and dangerous temperatures of the so-called exanthematous diseases are generally proportional to the severity of the external eruption, has been long taught. Accordingly direct treatment addressed to the skin has been much in favor.

Temperatures are to be reduced by water baths, by alcohol baths and by inunctions of lard and oil. Carbolic acid has also been extensively approved for cutaneous disinfection. All of these measures properly timed are helpful. But there are many clinical facts tending to support the belief that these diseases of childhood are, like most occurring in this period of life, intimately related to the mucus and digestive systems of the body. Nosology has distinctly classified these diseases as exanthematous and not as gastrointestinal.

Can it be possible that the more superficial facts have determined the classification, and that the classification has dominated and limited the prophylactic and therapeutic measures applied to these diseases? The elaborate treatise on scarlatina in Ziemssen's Cyclopedia has the following: "There is found in scarlatina no constant or characteristic condition of the mucous membranes of the organs of digestion" Vol. ii, p. 226. Again, "In the majority of cases of scarlatina most of the lymphatic glands which are accessible to examination, especially the cervical, i.e. the submaxillary and jugular glands, are more or less swollen and painful. It is altogether probable that this is due to the special influence of the throat affection." (*Ibid*, p. 242).

These may not be the latest promulgations of science on this subject, certainly they are not very positive or satisfying.

The same authority makes similar statements in regard to measles, and has nothing more conclusive in regard to the origin and relation of the lymphatic swellings which occur likewise in this disease, and offers nothing more rationally helpful from analysis of the digestive disturbances and relations to temperature, swellings and exanthem. The theory that the cause of these infections is local, operating through the mouth and throat, needs modifying.

As bearing upon this question of high temperatures, the eruption, swellings and various sequelæ of these diseases, I have a few observations to offer.

1. Temperatures of 103° to 106° F. in scarlatina and measles decline promptly by one or more degrees from an injection of a pint or more of cool water containing 2 to 10 grains, according to age of patient, of sulpho carbolate of soda per rectum.

2. In the same conditions and even in the same cases the cold bath has not acted with so much or so happy effect.

3. When the enema has been ejected without accomplishing a movement of the upper bowel, melioration of temperature has nevertheless been noted.

4. Offensive gases and intestinal dejecta are often in evidence from these enemas and a more notable reduction of temperature then ensues. To secure this effect repeated attempts may be required.

5. Sulpho-carbolate of soda and other suitable intestinal antiseptics prove useful when given by the stomach also.

6. Many of the children having scarlatina and measles with high temperatures are observed to have one or more carious teeth in the mouth, generating toxic influences for the lower digestive tract. It is of interest to note here that these diseases prevail especially during the irritable periods of teeth formation, growth, decay and exuviation.

7. The mouth and pharynx, the proximate cavities of the digestive tract, being accessible to observation and treatment should be frequently cared for by brushing or wiping the teeth and by cooling and non-irritating washes and gargles of antiseptic quality, especially during periods of high fever.

8. Post scarlatinal nephritis should always be in mind when directing treatment of this disease. Intestinal antisepsis as it may be promoted, and asepsis as it may be urged by cooling enemas, give aid and comfort to the kidneys, the daily excretions from which should be carefully and intelligently watched.

9. High post-eruptive temperatures are often and have been repeatedly traceable to infelicities of ingestion and digestion and are more effectively relieved by prompt and sufficient enemas than by any other treatment.

10. These high post-eruptive temperatures repeatedly rising in the same individual have been accompanied synchronously by sensible increase of submaxillary swelling and tenderness followed by the quick abatement of these lymphatic swellings along with the reduction of temperature from cooling antiseptic enemas.

This reaction, many times repeated with the same sequence and relation, would indicate that intestinal toxins have been absorbed with the chyle and distributed to the tissues at large, creating fever and temperature, and have been thence resorbed by the lymphatics, creating swelling, pain and tenderness at various irritable centers, as in the glands of the neck, etc.; and when the irritation persists and the toxins are allowed to accumulate to repletion suppuration results.

In one of my patients, age six years, who had suffered a primary temperature of 105½° F. there occurred during the post-eruptive convalescent stage three attacks on three days, not closely successive, of high temperature (102° to 104° F.) following in each instance the ingestion of a raw egg or the albumen-portion thereof. In each instance the submaxillary swelling and pain increased with the rise of temperature and subsided with its decline, and in each instance a clinical showing of 100° F. or less was safely regained within four to ten hours after resuming the cooling antiseptic enemas, which had been discontinued during the afebrile periods of convalescence. This case had slight angina and no ottorhea, but many carious teeth. Stomach and bowels habitually weak in function.

Now as to the mode. Enemas to be most effective should be made to reach and relieve the upper bowel. To that end, if practicable, and considering the available strength of the patient, he should be lifted or placed in the knee-shoulder posture, and the injected fluid coaxed, by gravity and manipulations of the abdominal parietes, to find its way well onward toward the stomach. The thing is worth doing well and time and temperature will be saved by doing it quickly. The existence of diarrhea is not a contraindication.

The title of this paper, which centres our inquiry upon scarlatina and measles, has been chosen because these febrile types are held to be of such specific and often virulent nature that marked success in dealing with their temperatures, if rationally explained, must command attention. But the argument and the lessons of experience are far more extensive and inclusive. Frequent flushings of the bowels in the management of typhoid fever, Asiatic cholera and other gastrointestinal diseases has had eminent professional endorsement. And I hold that pneumonia, meningitis and other diseases developing high temperatures and in which auto-toxins accumulate and are active, sometimes promoting lymphatic swellings and abscess, are likewise well within the sphere of aid by these cooling and antiseptic flushings and treatment of the alimentary canal. That the suppurative sequelæ of the eruptive and other febrile diseases when not tuberculous appear as an impeachment of the medical direction of those affections, I am inclined to believe.

It may be safely asserted that these post-febrile suppurations always develop through errors of the physiology or by the induced morbid anatomy of the lymphatic system.

The lymphatics constitute a portion of the apparatus of absorption and nutrition and may receive good or bad impulses very quickly from the digestive centers.

The practice of this scheme of internal irrigation does not necessarily interfere with anybody's usage or convictions as to the employment of cathartics. But if intestinal antisepsis can be secured without such forcing drugs there will remain a larger capacity for other medicinal reactions unattainable by enemas or other routine measures at the hands of the nurse.

Another argument in favor of frequent enemas for fever patients is found in their availability during defervescence and critical periods when the life force is low and the routine daily cleansing bath to the skin is discontinued because the evaporative and refrigerative effect has become a tax upon the delicately balanced vital forces.

It would appear that this common or general feature of acute diseases, high temperature, affords a field for professional and therapeutic consent, unity and uniformity, all too little seen in bedside orders of medical men. Since these cooling and cleansing irrigations are readily available for all ages, omissions should be exceptional and for cause.

In hospital and private practice, whenever the services of a competent nurse or assistant can be secured, it is my habit to make these procedures a regular routine.

Evidences of the usefulness and harmlessness of these irrigating measures is so convincing that their omission from daily routine treatment must in time become unusual and justly stigmatized as negligent and reprehensible. Of course, these enemas will operate with greater facility and effect if opiates or other repressive drugs be not employed to lock up the natural secretions, but such drugs certainly do not make the flushings less necessary.

INTUSSUSCEPTION IN CHILDREN WITH ILLUSTRATIVE CASES.

A. Primrose (*Canadian Jour. of Med. and Surg.*, Nov., 1900) says: The symptoms of intussusception are often very characteristic, making the diagnosis easy, but occasionally they are very obscure. Pain is a constant symptom, and is of a characteristic, spasmodic type. It comes in waves; the pain approaches a point of extreme intensity and then gradually subsides, leaving the patient free from it for a varying interval until a recurrence takes place. Vomiting may be a symptom, but it is frequently absent; it is characteristic of that form which involves the small intestine only. At the onset of the trouble the bowels may move, usually small, loose stools: later the motions consist almost wholly of mucus stained more or less largely with blood (characterized as presenting a red currant jelly appearance). Sometimes, however, the disease is accompanied by diarrhea and tenesmus. Early in the disease the abdomen is not distended, it may even be retracted, but later on we have obstruction with tympanites, and stercoraceous vomiting may supervene. There mav be a tumor palpable in the abdomen with a characteristic sausage-shape, but this may not be present. Then, again, in those cases where the invagination has become extensive. the apex of the intussusception may present through the anus or may be discovered by digital examination of the rectum. Intussusception may prove fatal in twenty-four hours or it may exist for some weeks, becoming thus a chronic condition.

Medical treatment is of little avail. Opiates have been advised in large doses. Here as always, however, opiates are apt to mask symptoms by giving a less serious aspect to the case, and thus, perhaps, causing delay in active operative measures.

Once a certain diagnosis of intussusception is made,one must initiate some method of undoing the invagination. Inflation with air or injection of fluids per rectum may be tried, but with caution. If one now has any doubt as to the reduction in its entirety of the intussusception, celiotomy must be performed without further delay.

SUPPRESSION OF URINE.

By M. H. Fussell, M.D.,
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Assistant Professor of Medicine, University of Pennsylvania.

IN this journal for June 15, 1901, Dr. John G. Cecil reports a case of probable tuberculosis of the testes, in which there was a total suppression of urine lasting seven days.

The following case is of interest in connection with Dr. Cecil's case. While there was not total suppression, but 10 ounces were passed in eight days.

H. N., aged 2 years, an only child of healthy parents. A maternal uncle died of tuberculosis two years before this child, otherwise the family history was excellent. On January 2, 1888, I was called to see the child, who was suffering from a slight mucous diarrhea; he was not very ill, and I did not see him again until June 5th; he was then vomiting severely and the diarrhea was worse. On the 6th, no vomiting, and two stools in the twenty-four hours. On the seventh he passed 6 drams of urine—all that was secreted in twenty-four hours. On the 8th 2 ounces were passed. On examination of the child an adherent prepuce was found; in no other respect was there any abnormality; there was no fever; the lungs, heart and abdomen were normal; no irregularity of pupils or other sign to suggest a serious disease. On the 9th a catheter was passed and the bladder found empty; the child was then circumcised, as it was suggested that the suppression of the urine was reflex. After the circumcision 1 ounce of urine was passed.

The urine each time was examined and found to be loaded with urates and uric acid, no albumen, no blood, no casts. On the 11th the temperature was 99.5°; the pulse 100; the child slightly delirious and restless. He was given a steam bath, sweat profusely and passed some urine which was lost. On the 12th he passed 2 ounces of urine. On the 13th he was given a bath and passed a small amount of urine; his temperature was 101°. On the 14th the pulse became irregular; he passed 3 ounces of urine. On the 15th urine became fairly free, containing no albumin, blood or pus. On the 16th a purulent conjunctivitis developed, the pupils were irregular, tache cerebral was noticed; he gradually became unconscious, urine was freely passed; convulsions occurred on the 18th; strabismus was marked; emaciation rapidly developed; opisthotonus and paralysis of the right arm occurred, and the child died with typical of meningitis on January 21st.

At the post-mortem, which did not include the examination of the brain, miliary tubercles were found in the lungs and spleen; the kidneys and bladder were normal. Doubtless there was tubercular meningitis. This case, one of general miliary tuberculosis, was of the greatest interest from the fact that suppression of urine occurred as an initial symptom of the tubercular meningitis. In eight days he passed 10 ounces of urine besides a small amount which was lost. With the beginning of typical signs of meningitis the secretion of urine was reestablished. I have always considered the suppression as reflex due to tubercular inflammation of the meninges.

The symptom is certainly rare in meningitis; it has, in the last thirteen years, never been seen by myself. The various books which I have consulted make no mention of it; even Osler, in whose practice rare symptoms are noticed, makes no mention of suppression of urine in tuberculosis. Could not Doctor Cecil's case have been of reflex origin, just as mine certainly was?

DR. ADAMS'S ADDRESS ON TUBERCULOSIS.

Adams (*Montreal Med. Jour.*, March, 1901), says: It is not for me, this afternoon, professor of the science of medicine though I be, to take up the well worn theme of the nature of tuberculosis, to demonstrate once again how this disease is due to the entrance into and action within the body of a minute living organism—not for me to discuss here the communicability of the disease from man to man, from animal to animal, and from one species to another. We accept this, and the Government already through its orders in council has accepted this. Tuberculosis is an infectious disease and as such we know that it is a preventible disease. In the words of him whom now we hail as King, uttered in the course of that broad-minded address with which he opened the International Congress of Hygiene in London in 1891, words which it was my privilege to hear, "If preventible, why not prevented?"

A CASE OF TAENIA SAGINATA IN A CHILD OF TWENTY-FOUR MONTHS FROM THE USE OF RAW SCRAPED BEEF FOR THE RELIEF OF CHRONIC INTESTINAL DISTURBANCE.*

By D. J. Milton Miller, M.D.,
Philadelphia, Pa.

MY purpose in making brief record of this instance of tapeworm infection is not because of any peculiar interest in the case itself, as infection with taenia saginata has been met with even at a much earlier age than in the example here reported,† but rather to serve as a warning against the somewhat common custom of adding raw beef preparations to the dietary not only of sick, but also, as recommended by one eminent authority, to that of healthy children.

My patient, a bottle-fed girl baby, was brought to me for the first time in February, 1890, at the age of 11 months, with a history of almost constant indigestion from birth. The stools had never been natural either in quality or quantity, while pain, fretfulness and sleeplessness had made life a constant burden both to itself and its attendants. It was much emaciated, weighing but 10 pounds, 5 ounces, or less than 3 pounds more than its birth weight.

Under a carefully regulated diet of modified and peptonized milk and beef-juice it improved considerably, so that in four months, when it was 15 months old, it weighed 16 pounds, 5 ounces, a gain of 5 pounds, 6 ounces.

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* Read before the Philadelphia Pediatric Society, May 13, 1901.

† W. J. Plant (*Archives of Pediatrics*, 1888, v, 472) has reported six cases between the ages of six months and two years.

S. A. Helker (*Archives of Pediatrics*, 1885, II) a case at five months.

Shaw Mackenzie (*British Medical Journal*, 1889, I, 16) one at nineteen months.

Müller (*Medicin. Correspondenzblatt. d. Würtenburg Aertzlich. Vereins*, 1837, vii, 80) one at five days.

Armor (*N. Y. Medical Journal*, 1871, xiv, 618) another at the same age.

During my absence from the city during the summer the child had prolonged diarrhea, the effects of which it had not recovered from when brought to me again in November, 1900, then 20 months old. It was fretful, sleepless, pale, very thin (not weighed) and obstinately constipated, having hard, white, dry motions every other day by enema only. Its food consisted principally of undiluted milk and bread. Upon a diet of raw scraped beef, peptonized milk and fruit juices the improvement was remarkable. In four months the child weighed 26 pounds, was of good color, ate and slept well and had one natural stool daily; but it was passing segments of tapeworm. These had been first noticed about two weeks before the child's visit to me, or about three months and a half after commencing the raw beef. After twenty-four hours of semi-starvation and purgation with castor oil, ½ dram of the oleoresin of male fern was administered suspended in glycerin and cinnamon water. This was followed in two hours by 3 teaspoonfuls of castor oil, with the result of causing the expulsion of 12 feet of worm with the head within thirty minutes after the exhibition of the cathartic.

As already stated, this case is reported solely as an illustration of the danger of giving raw and rare beef preparations to young children—a danger well recognized and insisted upon by many teachers and writers, but minimized by others. That the danger is real this and other cases are a sufficient proof.

Dr. Ellis W. Given informs me that he has recently had occasion to treat a child of two and a half years in which infection with tapeworm took place from the eating of raw meat.

Shaw-Mackenzie (*British Medical Journal*, 1889, i, 16) reports a case in an infant of 19 months from the same cause, and F. P. Henry one at 18 months. The same observer has also seen an adult with tænia in which raw beef juice was the infecting agent. (Personal communication).

Doubtless many more instances have occurred than the silence of the literature would indicate.

In many cases of chronic indigestion in infants raw and rare scraped beef is one of the most valuable dietetic and therapeutic resources, infants often appearing to digest these preparations more readily than they do the curd of cow's milk. In cases of this nature it is often advisable to run the risk of infection with tænia. But the use of raw beef as part of the regular dietary of healthy children after the eighteenth month, as recommended by Holt, is of very doubtful proprietary. This writer says that "the alleged danger from tapeworm in in this country so slight that it may be disregarded" (Diseases of Infancy and Childhood, New York, 1897, 154), while W. G. Thompson (*Practical Dietetics*, 1895, 94) makes a similar statement. The evidence adduced in this paper, however, shows that the danger does exist and that a small proportion of infants fed in this way do become infected. It would seem to be the part of wisdom, therefore, to reserve the use of raw beef to those extreme cases of indigestion in which the digestion of the proteids of cow's milk, however altered or modified, is attended with great difficulty, and to refrain from its use altogether in healthy children.

The employment of beef juice is not attended with so much danger. Indeed, if the beef is finely minced and pressed with a beef-press (not with a lemon squeezer), and then strained through fine muslin, such as a linen handkerchief (not through cheesecloth, which may permit the cysticerci to escape through its meshes) the possibility of infection is practically eliminated.

LUMBAGO.

Masse (*N. Y. Med. Jour.*, Feb. 23, 1901) recommends energetic rubbing of the back with the following liniment:

		Parts.
℞	Lime water	60
	Olive oil	60
	Chloral	30

—*American Medicine.*

Dr. William Osler, of Baltimore, has given $[illegible],000 to the endowment fund of the library of the Maryland Medical and Chirurgical Faculty.—*Atlanta Journal-Record.*

A CASE RESEMBLING MORBUS CÆRULEUS, PROBABLY DUE TO A DUSTING POWDER CONTAINING ACETANILID.

By Samuel E. Earp, M.S., M.D.,
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Professor of the Principles and Practice of Medicine and Sanitary Science, Central College of Physicians and Surgeons; and of Materia Medica and Therapeutics in the Central College of Dentistry.

IN June 1899 I had under observation a male child, age one month, which was thought to have morbus cæruleus. After the baby's morning ablution he was placed in his basket-cab by the fire. On account of the unusual quietude which reigned the attendant removed the cover lids and observed that the child's face and head presented a bluish gray appearance. Upon examination of the surface of the body the same condition was noticeable. Lips and tongue were almost black. There was a mental dullness which was at other times far from characteristic, the skin was cold, the respiration abnormally slow, but no sterterous breathing nor indications of dyspnea. On some portions of the body, especially the extremities, there did not seem to be an evenness of discoloration but they presented a mottled appearance.

The child has been in good health since birth with the exception of a week previous to the time mentioned, when there had been a mild attack of diarrhea. On account of neglect, perhaps of the attendant, the buttocks presented a raw, angry surface, produced by contact with the discharges from the bowels. Several persons who saw the child immediately suggested that it was what is ordinarily known as a blue baby.

The condition lasted for several days, and four members of the profession, in whom I have the utmost confidence, saw the case. The treatment for the dysentery was such as is indicated in cases of a like nature and included nothing to produce the cyanosis. The raw surfaces were dusted with a powder which I think contained boric acid, but when this had given out another was used which contained equal parts of boric acid and acetanilid. This information I obtained at a later period. When the acetanilid powder had been used for several days boric acid was substituted on account of the absence of the former powder. During the time that the cyanosis was perceptible, digitalis and strophanthus were used to support the heart, camphorated tincture of opium when it was absolutely necessary to produce rest and elix. peptenzyme and pepsin to favor digestion. Also alcohol baths, friction to surface of body and dry heat to cardiac region. Now, as to the probable cause of the condition present:

There is no question but that there was deficient oxygenation and an overcharged venous system. But what produced it? We know that this is present in acetanilid poisoning and is claimed to be present in morbus cæruleus. As far as the latter condition is concerned it might be stated that there was no perceptible congenital disease of the heart or lungs nor any abnormality. An interference with the placental circulation or atelectasis cannot offer an explanation, for this child was one month old and there had been no previous occurrence of this character in any particular whatever.

The child is well at this time and within a few weeks of two years of age. There have been no symptoms of the former attack. Overexertion has produced no effect, no dyspnea, no blue tint around the eyes, nose, or mouth during the act of crying or during the process of digestion, no clubbed fingers, toes, nor indication of malformation of the chest in inframammary region. The characteristic dryness of the skin and surface coldness are not in evidence, no edema of any portion of the body, no tendency to any bronchial irritation. It has recently been asserted that a syphilitic history exists in 90 per cent. of the cases in the present case this is negative.

If the case was one of morbus cæruleus the prognosis might be one of importance. One-half of the cases die in the first year and two-thirds die before the third year, and all of the cases are characterized by some of the symptoms at frequent intervals, especially during exertion.

The child now has all the indications of perfect health. All of the symptoms coincide with those produced by acetanilid. Now the query arises, was the cyanosis produced by the dusting powder, which contained equal parts of acetanilid and boric acid? This seems to be a rational conclusion.

Pediatrics recently published a report of a case of poisoning from the local use of acetanilid, differing somewhat from the one mentioned in this report. The interesting features of this case are so prominent that further comment is unnecessary.

EDITORIAL COMMENTS

The Teeth in Hereditary Syphilis

This subject, though one now long familiar by name to the great majority of medical practitioners, is still enveloped in some mist. The question "What are Hutchinson's teeth?" was recently put to a class of post-graduate medical men studying in this city, and it elicited an amusing variety of replies, some correct in the limited sense, some half correct, some hopelessly wide of the mark. Only half of the class were sure that Hutchinson's teeth were not milk teeth, and none of the number had ever heard that there are other kinds of dental anomaly almost as characteristic of syphilis as the one mentioned.—Presuming that readers of PEDIATRICS who have forgotten these points will be glad to be reminded, and that those who know will have no objection to a review, we venture upon a brief sketch of the subject.

Non-Syphilitic Teeth

First, as to what is not syphilitic in dental pathology, let us note that the teeth of either the first or second set are related in their nutrition and permanence to the local condition of the mouth and the general status of the patient. Mercurial stomatitis, prolonged aphthous stomatitis, even simple uncleanliness in the care of the mouth (of babies and adults alike) will result in decay.

It is a familiar fact that prolonged and exhausting acute fevers are often followed by a rapid and general breakdown of the teeth.—Some young married women seem particularly susceptible to the systemic drain of the first pregnancy, and before the baby has reached its ninth month of lactation the mother's teeth begin to look gashed and seamed, as though she were seventy instead of twenty-two. Upon these familiar facts one need not dwell. The dental erosions thus produced affect all the teeth equally,—molars and incisors alike,—and there is nothing characteristic in the cups, facets, or hollows that may result. In rickets the teeth are slow in appearing; they may also be ill-shapen and prone to early decay, but not in any peculiar way. Mercurial stomatitis in infants near the second dentition may modify the shape of the permanent teeth in various ways; some of these distorted and atrophied second teeth are occasionally mistaken for Hutchinson's teeth and once in a great while they may really be deceptive; but if we cling close to the description to follow there should not often be trouble.

True Dental Stigmata of Syphilis

These become more easily understood when we remember that hereditary syphilis is a disease already present *in utero*, and that its malign influence is at hand, as a rule, during the entire developmental period of the unborn infant. This explains why teeth not appearing till the fifth year when perhaps the child has been for several years cured to all intents and purposes of the initial rashes, mucous patches, or what not, may yet show a fundamental defect.

In the order of their diagnostic importance we may mention these changes in the second teeth as follows:

1. *Irregular decay*—cupping or hollowing, or general "collapse." This may be suspicious but is too often seen elsewhere to be of great value.

2. *Furrows* (*dents rayés*). Certain of these may be cause for serious consideration; the "sulciform erosion" of Parrot belongs in this class.

3. *Microdontism*. This is emphasized by Fournier. He attributes greatest significance to the "dwarfism" of the incisors, and particularly of the two middle upper incisors. If these be "doll-teeth," the diagnosis of syphilis is nearly certain to be confirmed by signs of lues elsewhere. In the same

class may be placed tuberosites and projections "Amorphism" of the teeth in the stricter sense (e.g., incisor for canine), and genuine monstrosities fall (though with less certainty of specific relation) under the same heading.

4. *Atrophy of the crown.* This may occur as far back as the first molar, giving the top of the tooth a shrunken and wrinkled look, comparable to a small tobacco pouch with the strings pulled tight. The same tooth in the region of the incisors is apt on first emergence to have a narrow, brittle, cutting edge, from which two or more fine spines project. The spines soon break, the cutting edge of the tooth decays somewhat more at the center than the margins, and we thus finally get the tapering tooth with concave "half-moon" cutting edge, which was first described by Jonathan Hutchinson and which, when occurring in the upper middle incisors is practically pathognomonic of hereditary syphilis.

5. *Chalk lines* (*sillons blancs*). These are equally characteristic though far more rare. They are described by Fournier as "milky" or "chalky" in color, being in fact discolorations and not erosions. They should be found on the two upper front permanent teeth and are as permanent as the teeth themselves. They are horizontal, symmetrical, about 1 mm. in width, and occur about midway between the gum and the crown. Their rarity detracts, unfortunately, from their semeiological value. B.

HEMORRHOIDS.

The following suppository is recommended by *La Presse Medicale* for hemorrhoids:

℞ Aqueous extract of ergot......3½ grains
Oil of theobroma................1 dram

—*American Medicine.*

CORRESPONDENCE

To the Editor of PEDIATRICS.

Sir.—In the experimental department of preventive medicine during the last decades of the nineteenth century there have been ephemeral evidences of antagonism to the practice of vaccination. With a comprehensive recognition and appreciation of the wonderful strides made by aseptic and antiseptic medication, it seems eminently fitting that we shall not forget the efficacy of the discoveries and advancements which have rewarded the labors of patient investigators in the past, and made their names illustrious.

One of the most glaring and obnoxious illustrations of hostility to the operation of vaccination was manifested by the people of Binghampton to the action of the Board of Education of that city in requiring all children of the public schools to be vaccinated. The recognition of the authority of the commonwealth in demanding compulsory education seems eminently in harmony with the admirable provision she has made for the enlightenment of her youth. With a stronger claim upon her subjects is an acknowledgement of the advancement she has effected for the protection of human life and normal features.

With a full conception of the responsibilities of the Board of Education, it is very questionable whether a concession to the wishes of the patrons of her schools was justifiable. The act tends toward the establishment of a precedent that may produce a large amount of trouble and vituperation.

In the recognition of these sinister results and actuated by philantrophic sentiments, I have made a compilation of the views advanced by some of the most eminent men of the profession relative to the efficacy of the protective influences of vaccination.

While the apparently extravagant statement of Dr. Edward Jenner, the discoverer of the protective influence of vaccination, "that it might become the instrument of extirpating this loathsome and destructive disease from the face of the earth," has not been verified, yet the claim presented by Dr. Geo. B. Wood, in his work on "The Practice of Medicine, "that vacci. nation affords the best attainable security, greater than that accruing from a previous attack of smallpox," is calculated to elicit the highest degree of faith in the protection afforded by the introduction of vaccine lymph.

And this confidence is corroborated by the highest of medical writers and teachers, who have graced the annals of medicine. L. S. Blackwell, M.D.,
Perth Amboy, N.J.

The Woman's Hospital has been incorporated in Los Angeles, Cal., with a capital stock of $20,000.—*Atlanta Journal-Record.*

The prevalence of scarlet fever in Waycross has called forth an ordinance forbidding public gatherings of all kinds until the epidemic is checked.—*Atlanta Journal-Record.*

The State legislature of Alabama recently enacted a law probhibiting christian scientists and faith-cure doctors from doing business in that State.—*Atlanta Journal-Record.*

The *Stylus* has been purchased by, and will be consolidated with, the *Inter-State Medical Journal*, and the two publications continued under the latter name.—*Atlanta Journal-Record.*

A bust of Dr. Horace Green, a pioneer in the medical profession of the city of New York, was presented to the New York Academy of Medicine on February 7.—*Atlanta Journal-Record.*

SOCIETY REPORTS

SOCIETY FOR THE STUDY OF DISEASES IN CHILDREN.

Ordinary Meeting March 15, 1901, at the Belgrave Hospital for Children, London.

Dr. EDMUND CANTLEY in the Chair.

Dr. GEORGE CARPENTER showed two sisters with many curious **Deformities of the Skull, Face, Fingers and Toes.** There were also developmental heart lesions and ruptures in the abdominal wall. Mr. Sidney Stephenson pointed out that the eyes were displaced by some developmental fault in the position of the roof of the orbits, and that the left cornea of the eldest child was imperfectly differentiated from the sclerotic. Dr. Sutherland enquired as to maternal impressions. Mr. Clement Lucas alluded to the transmission through many generations of such deformitles as those exhibited by Dr. Carpenter's cases. Dr. George Carpenter in reply said that there were no maternal impressions.

Dr. WILLIAM EWART showed an infant, aged 7 months, suffering from **Asthma.** During the paroxysms all the symptoms of true asthma were present, while during the intervals, the child was quite comfortable. Gastric disturbance and vomiting were dominant features of the case; relief was obtained by regulation of the diet and the internal administration of apomorphine and iodide of potassium and hydrochloride of cocain; some benefit was also obtained from the application of expiratory pressure to the thorax. The Chairman agreed that such cases were rare and were sometimes difficult to diagnose from capillary bronchitis; he inquired as to such sources of irritation as adenoids, elongated uvula or enlarged tonsils. What was the prognosis as regarded after life? Dr. Chapman enquired as to the character of the feeding. Dr. Chaffey had recently made a post-mortem examination of such a case and had found a very large thymus gland but no marked bronchial alterations. Mr. A. H. Lubby said it would be interesting to know whether all sources of peripheral irritation had been excluded before the case was regarded as one of ordinary asthma. Dr. Sutherland said that in several such cases he had made out that the thymus was the organ primarily affected; he had never seen the asthma persist after the age of two years. Dr. Ewart, in reply, did not think there was any marked enlargement of the thymus gland in his case; he had not examined for adenoids because the child was so ill; but no difficulty had been experienced in passing the nasal catheter. It was difficult to say what the prognosis was; the child was breast-fed at first and then fed on milk and barley-water.

Mr. F. Jaffrey showed for Mr. Clinton T. Dent a case of **Subdural Abscess Treated by Operation.** The patient, a lad 12 years of age, had suffered from double otorrhea for two years and this had led to vomiting, rigors, high temperature, and signs of subdural mischief; he was trephined on the left side and a small subdural abscess was found; the lateral sinus was found covered with lymph and thrombosed, so that the outer wall of the sinus was incised and the clot removed; the internal jugular vein was not ligatured; the lad made a rapid recovery. Mr. A. H. Tubby enquired as to the condition of the optic discs, which, in his experience, often showed change apart from gross intracranial mischief. Mr. Jaffrey, in reply, said the optic discs had not been examined.

Mr. F. Jaffrey showed a **Tumor** occupying nearly the whole of the sacrum and coccyx, in a girl aged two years; it had been tapped thrice and found to contain dark-colored fluid not of cerebrospinal origin; the growth had lately shown signs of suppuration and had in consequence diminished in size; the growth, which was internally connected with the posterior wall of the rectum, was thought to be a teratoma. Mr. Clement Lucas, who doubted whether the growth had any connection with the spinal cord and canal, said the proper treatment would have been early excision. Mr. Jaffrey, in reply, said he now agreed with Mr. Lucas's view.

Dr. Edmund Cantley showed a lad, aged about 8 years, who developed left hemiplegia and athetosis after the occurrence of "fits." The athetoid movements of the left arm were characteristic, but not severe, and affected the hand chiefly; the probable explanation was a cortical hemorrhage or thrombosis during a fit with some irritation of the nature of sclerosis. Dr. Turnbull asked whether the movements ceased during sleep. Dr. George Carpenter thought there was purposive element about the movements; he asked whether there was any facial paralysis. Mr. A. H. Tubby thought the movements much slower than in athetosis; if deformities were relieved these cases did well. Dr. Leonard Guthrie enquired as to the evidences of congenital syphilis; in one of his own cases the motor area was exposed and part of the cortex excised, and,as a result, the movements entirely ceased for more than a week; they then became more intense than ever; eventually, however, the patient improved and could make more use of his arm than before.

Dr. Edmund Cantley showed two cases of **Microcephaly and Idiocy** in lads aged respectively 5 and 4 years. Both cases had suffered from head-nodding, associated with nystagmus in the elder one; he was not prepared to recommend operation. Drs. Leonard Guthrie and G. A. Sutherland suggested that syringomyelia might also be present. Mr. A. H. Tubby recounted the results of craniectomy in four such cases, of which two died, one was still alive and one could not be traced.

Dr. Henry Ashby (Manchester) read a paper on a case of **Congenital Acute Nephritis.** An infant was stated to have shown signs of dropsy on the second day after birth and to have vomited and passed but little water; when examined, at 4 weeks of age, there was excessive edema of the face, trunk and limbs; the bladder was empty, no urine was obtained; no evidence of syphilis; it died in uremic convulsions a few hours after it was first seen; at the post-mortem examination the kidneys were found to be lobulated, and, upon section, they were pale, resembling "the large white kidney." The heart was small and contracted; the liver and lungs were gorged with dark blood; microscopically the kidneys showed many greatly dilated convoluted and straight tubes; many blood and fibrinous casts were present; the epithelium, for the most part, was glandular, and there was commencing periglobular nephritis, as well as interstitial changes between the tubules. The Chairman enquired as to the possibility of infection subsequent to birth. Dr. Leonard Guthrie asked whether any signs of congenital syphilis were present. Dr. George Carpenter had seen one case of syphilitic nephritis in a child six weeks old; during life the child had dropsy and casts in the urine, and after death there was found much tubular and interstitial nephritis; lobulation of the kidneys, of course, was not common. Dr. Ashby, in reply, thought the condition congenital because the edema appeared on the second day; one would say that "a white kidney," such as that in the present case, was not produced in four weeks. The suggestion of a syphilitic origin was worthy of consideration.

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting January 8, 1901.

President, DR. ALFRED STENGEL, in the chair.

Drs. W. M. FISHER and J. A. SCOTT presented an infant of 17 months, born of Italian parents, showing great enlargement of the spleen and a severe anemia. The pallor was noticed one month after birth; the splenic tumor was noted as soon as he came under observation (at 10 months) and has continued to increase in size; the symptoms have been chiefly an intestinal catarrh with frequent stools; no nose-bleed; no hemorrhages from mucous membranes; teething normal; no rickets; no evidences of syphilis; no marked evacuation. The blood count was examined five times between June and January 7th; the first count was reds, 3,120,000; whites, 105,000; hemoglobin, 20 per cent. The differential count showed polymorphonuclears, 27.5 per cent.; lymphocytes, small 27 per cent., large, 30 per cent.; myelocytes, 8 per cent.; eosinophiles, 7.5 per cent. Subsequent examination showed a reduction of leukocytes at one time to 18,600. At present the leucocyte count is again rising, 36,700. The differential count remains about the same; the blood shows marked poikilocytosis, many marcocytes and microcytes, many normoblasts, a few megaloblasts, evidences of degenerative change in the reds as well as polychromatosis. The case is regarded as one of splenomyelogenic leukemia, though it is yet on the border line of leukemias and pernicious anemia.

Dr. S. McC. HAMILL presented a 6-months-old infant showing a rather interesting form of **Anemia**. There was nothing of special note in the child's history except that it did not inherit syphilis; it had none of the signs of congenital syphilis; it had had no illness other than the present. According to the mother's statement the child had been yellow since the fifteenth day of life. There was a history of the child having been feverish at odd times, but the temperature, taken quite frequently, had shown no elevation.

The physical examination showed marked yellowness of the skin, pallor of the mucous membranes and pearly sclera. The child was fairly well nourished; there was a slight systolic whiff over the pulmonary area and loud hums in the vessels of the neck; the lymphatic glands in the cervical and inguinal regions were just large enough to be palpated; there were no rachitic manifestations; the liver was palpable about 1½ inches below the margin of the ribs; the spleen was palpable at the same distance.

The most recent blood examination showed 42 per cent. of hemoglobin (Fleischl); 2,970,000 red blood corpuscles; 23,920 white blood corpuscles. There was marked variation in the size and shape of the red cells; marked polychromatophilia: there were 37 erythroblasts in 509 leukocytes, the majority being normoblasts; there were a few macroblasts; there was some karyorrhexis and atypical shapes. The differential count of the leucocytes showed: poly., 21.8 per cent.; mono., 4.2 per cent.; trans., 4.0 per cent.; lymph., 67.6 per cent.; eosin., 2.4 per cent. There were three sizes of lymphocytes, some of the largest being difficult to differentiate from mononuclears; many showed sacculation of the cell well. There were many irregular forms, staining blue, which were practically impossible to classify; there was a decided increase in the number of plaque heaps.

The case was considered impossible of classification under any of the various described forms of anemia and is probably occupying a midway position between leukemia and pernicious anemia.

Dr. E. E. Graham showed a specimen of **Malformation of the Bowel.**

Dr. D. J. Milton Miller showed a case of **Head Rotation and Head Nodding with Nystagmus** in an infant of 14 months. The child had been artificially fed since birth and had suffered constantly from digestive disturbances. When 5 months old it had a severe and prolonged attack of colitis with marked rectal collapse. Two months later, in May, 1900, at the age of 7 months, the head movements began and had continued ever since, with temporary periods of improvement, corresponding, apparently, with improvements in its general condition. She was brought to Doctor Miller for the first and only time on December 24, 1900; at that visit the movements numbered sixty a minute and were mostly lateral, interrupted by occasional nodding movements. They were remarkably smooth and rhythmical in character and not at all spasmodic, a peculiarity insisted upon by Aldrich. The movements ceased during sleep, when the attention was fixed, and almost, but not entirely, in the recumbent position. Under ordinary observation no nystagmus could be discovered but on holding the child's head and thus stopping its movements a fine horizontal nystagmus became at once apparent, most marked in the right eye, especially when the gaze was directed upward. No evidence of eye-strain could be elicited; most of the child's time was, and had been, spent on the floor of a fairly light room; neither could any history be obtained of the child remaining for long periods in a position where a bright ilght or reflection was looked at in an unnatural manner, which, with living in dark rooms, Raudnitz considers of great importance in the etiology of these cases. Signs of rickets were present; bending of ribs, epiphyseal enlargements, protuberant belly, etc., etc.

Doctor Miller said that this was the fourth case of this curious affection seen by him associated with rickets. In a review of the literature about a year ago he had found rickets in about 50 per cent. of the cases. He believed it, however, to be much more frequent, slight signs being readily overlooked. The case illustrated also the influence of acute and debilitating illnesses in determining the affection in a child whose motor centers are not very stable, as is usually the rule in rickets. In the investigation above referred to he found such a connection in the majority of cases—measles being particularly frequent, possibly because of the eye affection in that disease. Another interesting point about the present case was the absence of the head movements at the present time although the nystagmus is quite evident. Three weeks ago the condition was exactly the reverse—the head movements were very marked while the nystagmus could be brought out only by restraining the former. This showed the close relation between the eye and head movements, as did also the cessation of the latter on bandaging the eyes, and supported the contention of Raudnitz, that the affection was due to a reflex spasm brought about by the attempt at fixation. This was undoubtedly true of many of the cases, but not of all. The eye grounds of the patient had not been examined but it was intended to have this done at an early date.

Dr. William Pepper read a paper entitled **A Study of Congenital Sarcoma of the Liver and Suprarenal, with Report of a Case.** A female child, apparently normal at birth, was found, at the age of 3½ weeks, to have an enlarged abdomen which increased markedly until death, at the age of 6½ weeks. The autopsy showed the right suprarenal enlarged to the size of an English-walnut, firm and hemorrhagic; the liver was the seat of an infiltrating growth and weighed 2 lbs. 8 oz.; it was uniformly enlarged, the capsule smooth and mottled or marbled in appearance. On section it was found uniformly infiltrated by the growth to such an extent that scarcely any hepathic tissue could be detected; the other organs were normal; there were no other secondary growths; the tumor was a lymphosarcoma. A thorough search of the literature was made and five very similar cases were found. These cases are recorded by Heaton, *Trans. of the Path. Soc., Lond.*, 97–98. vol. xlix, p. 140; Orr, *Edinburgh Med. Jour.*, Sapt. 1900; Parker, *Trans. of the Path. Soc., Lond.*, 1880, vol.

xxi; deRuyter, *Langenbeck's Archiv.*, 1890, vol. 40, p. 98; Meisenbach, *Weekly Med. Review*, St. Louis, 1884, ix, 433. All of these cases occurred in the first few weeks of life, all died in a few weeks, all had enormously enlarged livers which were infiltrated with a sarcomatous growth; three had also the suprarenals involved, and one a secondary growth lying between the spleen and kidney (suprarenal). There were no other secondary deposits in any of the cases; four were females and in one the sex is not given. There are a few other cases of early sarcoma of either the liver or suprarenal, but they did not occur as early as those mentioned, nor do the growths resemble those quoted, either in symptomatology or in pathological findings.

Dr. Scott.—It is of interest to note the absence of pigmentation in the cases so far reported. It would seem probable that the process is so acute that time is not given for pigmentation to occur, as seen so notably in the main chronic diseases, such as the malignant cachexias and Addison's disease.

Dr. Pepper.—Pigmentation has been discovered very rarely in sarcoma of the suprarenals whether primary or secondary, and whether the growth was congenital or not, and there has not seemed to be much difference in this way between growths of protracted course and those of rapid development.

REGULATION OF MARRIAGE.

The *Medical Record*, in speaking of the Chilton bill, which has passed the Minnesota Senate and is expected to become a law, says the bill is not only intended to restrict the marriage of persons afflicted with physical or mental disorders, but will affect all wishing to marry, as every candidate for matrimony must undergo a physical examination by a competent medical practitioner. "Even if its provisions, in many instances, should be violated, every attempt at enforcing the law would prove a valuable educational measure and carry with a proper deterrent effect.—*American Medicine.*

A bounty on rats is being paid by the Stockholm authorities as a precaution against bubonic plague.—*Atlanta Journal-Record.*

ABSTRACTS

ACQUIRED AND INHERITED SYPHILIS.

Wm. S. Gottheil (*Med, Standard*, Dec., 1900) says: As in cases acquired in the ordinary manner, congenital syphilis can only be transmitted during the primary and secondary stages of the disease in the parents. Cases showing only the tertiary phenomena cannot, as a rule, transmit the disease to their offspring.

The fetus may be infected in two ways; in the first place the zoosperm or ovum or both of them may contain the virus; and in the second place, the mother, gravid with a healthy fetus, may transfer the affection by the placenta to the child. In either case the course of the disease is the same.

The first and most marked effect of syphilis on the fetus is the interruption of pregnancy. In 330 syphilitic gravidities Kossourtz saw abortion or premature delivery in 127 or about 2-5; only 3-5 reached term. The essential cause of this is placental disease, which may either be an endarteritis or gummatous in its nature. The nearer conception is to infection the more certainly does interruption of the gravidity occur. Gradually, however, the intensity of the specific influence becomes less. Where many conceptions occur in such cases, the earliest ones end in abortion; later ones terminate in the delivery of dead children; then occurs the premature delivery of living children; then the delivery of full-term syphilitic children; and, finally, that of full-term healthy children.

Infection is most certain and severe when both the parents are syphilitic. The prospects for the child are almost as bad if the mother only is affected. When the father alone is syphilitic the earlier conceptions terminate in the same way as when both parents have the disease. But while the maternal influence is persistent and abortions and the birth of syphilitic children may occur for years when that is present, th paternal influence is less enduring, and the symptoms of hereditary poisoning become less and less in a comparatively short time.

When the mother becomes infected after pregnancy has occurred (postconceptional syphilis), the child is usually poisoned through the placental circulation. During the first month this invariably occurs; but after the fifth month many of the children escape, and during the last two months hereditary transmission does not occur. Profeta's law is the name given to the fact that children who thus escape placental infection, and do not contract the disease intra-partum are, as a rule, immune to lues.

Colles' law is to the effect that the mother of a syphilitic child, even when she has shown no evidence whatsoever of the disease, is immune against it. She never becomes infected on the nipple, no matter what the condition of the mouth of her child; nor can her husband infect her. Experimental inoculations by Caspery, Neumann and Finger shown that it is impossible to give such a woman syphilis. On the other hand, the child is very contagious to non-protected woman.

When neither abortion nor the delivery of a dead child is the result of a syphilitic pregnancy, the child may be born showing some of the early symptoms or it may be apparently healthy. In the latter case the first signs may appear immediately after birth,usually manifesting themselves during the first three or four weeks of extrauterine life. In exceptional cases they are postponed till the third or fourth month, and they never appear later than the sixth month.

INFANT FEEDING.

The mortuary returns of the summer months in infantile life prove that the subject of infant feeding has not as yet reached perfection. Take, for instance, our neighboring city of Montreal, with barely a total population of 300,000; the records show that in two recent weeks the deaths among infants amounted to 116 and 107 respectively. It is a melancholy fact that at the end of the nineteenth century, a period which boasts such rapid progress and development in civilization and undoubted advancement in all branches of medical science, that one-third of all infants born die before they have attained the completion of their third year, and this largely due to improper feeding methods. While we have undoubtedly made substantial progress in this particular branch of sanitary science, that progress is, in the main, mostly theoretical and not practical. We are not as yet able to supply a synthetic breast-milk exact with the normal product. There may be probably too eager a desire on the maternal side of the problem to entirely cease from nursing where the natural product fails, or is failing, instead of endeavoring to supplement the deficiency by other methods, which have now practically fallen into disuse. The physician who conserves the energies of his patient in the direction of due and proper encouragement to continue the baby at the breast, be the pabulum never so little, will in the long run reap better rewards than they who abandon this entirely for the various diversified proprietary foods of which the times are prolific. Even when the breast has to be abandoned entirely, and substitute feeding commenced, much will be accomplished by him who bolsters up the all too meagre knowledge of the mother for her bottle-fed baby. The mother is generally imbued with the idea that the bottle fed baby requires less attention than the breast-fed one, and that anyone can supply this attention as well as herself. This certainly is false teaching, and needs early correction. Into these mothers' hands are thrust scores of fat babies' pictures, which serve the purpose of exploiting infant commercial dietaries, and by their simplicity of preparation appeal to the laziness of the mother. What a different tale would be told if the victims of this commercial instinct could only be placed side by side in photographic array with their more fortunate brothers.

For the sake of helpless infants who succumb in countless armies every summer, what a pity it is that parents cannot be brought to a proper conception of their duty towards their offspring. The constant and regular supervision of the family physician over these little ones, training the mother in the proper care and feeding of her child, would, we think, go far towards lessening the frightful mortality recorded in all large cities during the summer months; and to that extent a fraternal organization for the infants alone, of a health and sick benefit nature, with a physician attached, making regular and stated visits upon his charges, might go far towards solving this problem of infant feeding, which is intimately associated with that of infant mortality. The State herself cannot afford to have citizens brought up in the world without the "milk of human kindness" which, someone asserts, is to a good extent absent in most bottle-fed babies. What we require for success in this direction is some very simple plan of modifying cows' milk (not cow's milk, as all are agreed that milk taken from a large number of cows is better than that from a single cow). So far, we think that this has not been accomplished, as authorities now agree that the vast majority of these modifications have proved failures, and until such times come when we have a plain, simple rule to go by and to instruct mothers with, we may expect that they will not take kindly to our efforts to inculcate proper methods of feeding among their numbers.—Editorial, *Dominion Medical Monthly*.

FECAL IMPACTION.

A careful analysis of cases of fecal impaction develops the following facts:

Sex and Age.—Of the 46 cases, 23 were men and 23 were women. Their ages ranged from eighteen months to seventy-six years; 26 were thirty-five years or more, while 20 were under that age, the average age being thirty-six years.

Location.—The impaction was located in the rectum 31 times, sigmoid and rectum 5; sigmoid 6; colon, sigmoid and rectum 1; descending colon 1; cecum 1; and transverse colon 1.

Weight.—The fecal accumulations ranged in weight from 4 ounces in a child to 12 pounds in an adult. The length of time these patients went without stool varied from two days to three months.

The causes of impaction directly and indirectly are as follows:

Stricture, five; carcinoma, four; pregnancy, one; careless habits, five; congenital malformation of the anus, one; traumatic stricture, one; paresis, one; parched corn, two; fibrous bands in rectum, two; chronic constipation, two; anal fissure, two; loss of intestinal tonicity, five; retroverted uterus. one; unknown, one; inability to evacuate the bowel after hemorrhoidal operation, one; hypertrophied sphincter, one; gall stones, one; sarcoma, one; enlarged prostate, one; hypertrophied levator ani muscle, one; disseminated polypi, one; enterolith, one.

I have recorded these cases with a view to pointing out the frequency of impaction or coprastasis—the necessity of its prompt surgical treatment, and further, to show the varied affections and conditions which may induce it.—*Postgraduate*, Jan., 1901.

CONCERNING ADENOIDS.

RICHARD ARTHUR (*Australasian Medical Gazette*, Feb. 20, 1901) says: It is chiefly with the various effects of adenoids that the author wishes to deal in this article.

The results arising from the presence of adenoids may be classified as due to—

1. Mechanical causes
2. Infective causes.

Sometimes these two causes are combined in bringing about an abnormal condition.

1. The first class of cases include all those in which the results brought about are due to the mechanical blocking of the air passages by the adenoid growths.

(*a*) Interference with the hearing power. The presence of adenoids is undoubtedly the chief cause of the common forms of middle ear deafness both in children and in adults.

(*b*) Interference with the proper performance of respiration. From this result, maldevelopment, not only of the chest but of the whole body. As one observer points out, the mouth-breather is usually found shallow through the upper part of the chest, and with very small lung capacity. Sufficient air is not inhaled and therefore the blood is not properly oxigenized, and is surcharged with CO_2. This excess of CO_2 causes the lassitude, headache, stupidity and sleepiness commonly met with in mouth-breathers, and gradually renders the nerves of special sense less active and responsive to stimuli. The excess of CO_2 and lack of O is the cause of the loss of appetite, malnutrition and general cachexia so often found accompanying mouth-breathing. Examination of the blood also shows that there is generally a deficiency of red corpuscles, a condition which rapidly improves after operation.

(*c*) Various reflex effects, such as laryngismus stridulus, asthma, incontinence of urine, night terrors, etc., are supposed to be caused by adenoids. At least these conditions often disappear after the growths are removed.

(*d*) Physiognomical changes; they are of considerable importance from the aesthetic point of view, and the text-books do not give the subject the prominence it merits.

The continued presence of a mass of adenoid tissue in the nasopharynx leads to quite definite structural changes. The natural nose-breathing being replaced by mouth breathing, the features which are plastic in the young, respond in time to the change. The nostrils become pinched and their orifices, which in children look more forward than downward, get permanently fixed in that position giving an unpleasant appearance to the face. In some cases, too, a chronic eczema about the nostrils, due to a purulent nasal discharge, causes thickening of the tissues and the loss of the graceful curve of the nostril.

The alterations in the mouth are no less striking. An almost invariable accompaniment of chronic nasal obstruction in the young is heightening and narrowing of the palatine arch. The exact *modus operandi* of this change is not yet settled, but the fact is indisputable. The effect of the narrowing of the arch is to push forward the jaw, causing, in some instances, "buck-teeth" and making the upper lip project forwards. There is also a real or apparent thickening of the upper lip.

On the other hand, the narrowing of the arch makes the malar ridge prominent, and thus gives rise to high cheek-bones.

Again, the open mouth causes the lower jaw to drop. The open mouth and dropped jaw not only give a stupid look to the face but the chin seems to alter in form. Add to this a look of stupidity, which is the outward sign of the mental dullness and impairment of hearing that generally accompany pronounced cases of adenoids, and we obtain a *tout ensemble* that is altogether to be deplored. If the obstruction is recognized and removed early the features will tend to return to their normal development, but if the condition persists for years the structural changes will necessarily become fixed and the restoration of the nasal breathing cannot be expected to effect anything in this way.

2. Results due to infective causes:

At present there is a great deal being written about the effects of oral sepsis, but it would appear that it is equally necessary to emphasize the results of naso-pharyngeal sepsis. The structure of adenoid tissue fits it peculiarly for micro-organisms to lurk in and await opportunities for doing harm.

As one writer (Pomeroy, *Boston Medical Journal*, Jan., 1900) points out, "The pharyngeal postnasal chamber is a distributing point for infection to the middle ear, brain, lungs, stomach and intestine." The part which has to bear the brunt of this infective invasion is undoubtedly the middle ear. It is certain that practically all suppurative conditions in the tympanum are due to the entrance of micro-organisms by the Eustachian tube. In the normal nasopharynx, with its comparatively smooth walls, absence of catarrhal conditions and isolated Eustachian cushions, the soil is unfavorable for the growths of infective germs, and even if present,the chance of their gaining entrance into the Eustachian tubes is not great.

On the other hand,the hypertrophied adenoid growth forms and ideal breeding-ground for micro-organisms, and bacteriological examination has proved that they are constantly present in the tissue removed by operation. Among others are the streptococcus, the staphylococcus and the tubercle bacillus. Various authorities have stated that from 12 to 20 per cent. of adenoids are tuberculous—a fact of the utmost importance. Again, clinical observation shows that nearly all children with a purulent discharge from the ear have adenoids. In fact, it should be an invariable rule in all cases of chronic otorrhea to at once examine the nasopharynx.

The etiology in middle ear suppuration seems to be this: There is a mass of adenoid tissues in the nasopharyx in which either micro-organisms are actually present, or which at least offers a favorable ground for their lodgment and development. To this being superadded a catarrh or the local congestion caused by one of the exanthemata, the infective germs have the conditions provided which can allow them to advance from their base and middle ear suppuration is the result.

Though some observers believe that attacks of the exanthemata cause adenoid hypertrophy, Lennox Brown points out that this statement of cause and effect is often invented, and that in many cases it is the presence of adenoids which increases the severity of the specific fevers.

With adenoids there is generaly a large amount of muco-purulent secretion which trickles down the pharynx. This secretion can be seen hanging down behind the soft palate, especially when the patient gags, and is in itself almost diagnostic of the presence of adenoids.

The consequences of the continual swallowing of this secretion are undoubtedly disorders of the alimentary tract, and it is possible that the increase in size and weight noted in children after the removal of the growth is partly due to a restoration of the assimilative powers. The entrance of this purulent secretion into the larynx may cause irritation not only there but in the bronchi and lungs, and at least predispose to bronchitis and pneumonia.

Inflammation and enlargement of the cervical glands also result sometimes in connection with infection from the nasopharynx, and the fact that such a large proportion of cases of adenoids are proved to be tubercular, points to the necessity of removing a possible source of general tubercular involvement.

MENSTRUAL CONDITION OF THE AVERAGE GIRL IN AVERAGE HEALTH.

Dr. George J. Engelmann, Boston (Southern Surg. and Gynecol. Assoc., Nov., 1900; *Jour. A.M.A.*, Dec., 1900), presented an interesting statistical paper on this subject, and the facts presented by him were culled from the records of 4.873 cases from high and normal schools, colleges and department stores, girls between fifteen and twenty-six, the majority between eighteen and twenty-two,in rather better than average health, in good health and in numbers sufficient to admit of positive deductions as to what may be termed normal or average menstruation.

The average period of the average girl in average health presents very different features: Regularity in 50 per cent. of the cases only; recurrence every twenty-eight days in 30 per cent.,varying most frequently from twenty-six to forty-two days, 45 per cent. being over twenty-eight days. The duration varies from two to seven days, average 4.6; from 66 to 70 per cent.suffer more or less, the number of sufferers varying accordto age and nature of occupation, between 30 and 90 per cent. Lessened ability for exertion, mental or physical, is admitted by 60 per cent. Some few are habitually incapacitated from work, and 30 per cent. occasionally.

A CASE OF PAPILLOMATOUS CYST IN A CHILD FOUR YEARS AND NINE MONTHS OLD.

Simons (*Virginia Med. Semi-Monthly*, March 22, 1901) reports the following case:

L. H. White, aged 4 years and 9 months, was brought to me from a neighboring town because of failing health. It was stated that she had been in good health up to June last, when she complained of vague. transitory pains in the stomach. A swelling of the abdomen was observed in August last, and had gradually increased, becoming more and more prominent on the left side.

During the last two months, however, the symptoms have been more rapidly developed; she lost her appetite and has fallen off very much in flesh; the abdomen has become more and more distended and prominent; there has been daily a slight rise of temperature, and on the morning of admission to the Infirmary it reached 100° F. Her parents are uncertain, however, as to the exact time at which the swelling of the abdomen commenced; icterus has gradually developed during the past two months.

The condition of the child when I first saw her was that of rapidly failing health; she was anemic, her appearance cachetic and her skin of the yellow, muddy color, indicative of profound malarial poisoning, although the sclerotics did not show the characteristic yellow tinge.

On examination her abdomen was found very much distended, the enlargement extending well up to the diaphragm, down to the pelvis, but not apparently dipping into it, and well out to the lumbar region on either side. On palpation the abdomen was found to be full of fluid, but a solid mass was discovered, most prominent at the umbilical region, and pressing out toward the right side.

There was dullness on percussion in every direction. so that it was impossible to distinguish clearly the outlines of the tumor. Because of the great distension and tension of the abdomen, it was not possible to trace the tumor to its connections.

The fact that the tumor did not appear to dip down into the pelvis seemed to exclude disease of the pelvic organs, and as it could not be traced up under the ribs to the region of the gall-bladder and liver, these organs were excluded. As, however, the growth seemed to press backwards to the region of the kidney, and especially to that of the right side, the diagnosis appeared by exclusion to be a tumor of the kidney.

The well-marked cachexia in the case and the comparatively uncommon occurrence of sarcoma of the kidney in children, induced the provisional diagnosis of malignant disease of that organ. An exploratory laparotomy was advised, and accepted by the parents of the child, as it was evident to them the assurance that medical treatment promised no benefit, was correct.

The child was admitted to the Riverside Infirmary on January 27th and the operation was done on the following day.

When anesthesia was obtained was obtained with chloroform, another careful examination of the abdomen was made and it was discovered that the tumor occupied almost the whole abdominal cavity from the brim of the pelvis to the diaphragm. Its surface was more or less irregular, and on palpation it was semi-solid in consistence. It was then that the real condition of the case was suspected.

A median incision was made, a quantity of ascitic fluid escaping, and it was found that the anterior surface of the tumor was adherent to the abdominal wall.

Exploration of the cavity discovered the omentum closely adherent to the anterior surface of the tumor, but elsewhere the adhesions were few and slight. It was learned, moreover, by this exploration that the tumor had its attachment below. It was determined to undertake its removal, and to this end the incision was enlarged upward,it being borne in mind that the bladder from its high abdominal situation would be endangered by extending the opening downward, although this direction would have given greater facility. By manipulation the long axis of the tumor was engaged in the opening, and it was finally delivered from the abdomen.

The tumor was attached by a thin pedicle about 3 inches in width to the right lateral wall of the pelvis. It was clamped and the tumor removed; the pedicle was tied with chromicized catgut in a number of sections, each section being cut off after having been tied.

Atter having been cleansed, the abdomen was closed by suturing the peritoneum with a continuous stitch of chromicized catgut, and the skin, muscular and tendinous structures with silkworm gut. The tumor was of the size of the adult head, consisting of a very friable cyst wall, the cavity of the cyst being filled to its utmost capacity by papillary growth, presenting a cauliflower appearance.

Whence this tumor sprang, and in what tissues it had its inception, I am unable to say. The authorities on this subject seem to have various theories and opinions. I am satisfied, however, that its only attachments were by its pedicle to the right side of the pelvis, and by adventitious adhesions to the omentum and the anterior abdominal wall. It seems to me certain that it had its origin in the broad ligament of the right side.

The little patient reacted well from the shock of the operation, and has had an uneventful recovery. The temperature did not rise beyond 99° F., although on the date of admission to the Infirmary it reached 100° F.

The stitches were removed on the fourteenth day, the wound having healed throughout. Since the operation the child's complexion has cleared up, her expression is bright and cheerful,a great contrast to her previous condition, and her appetite is so good as to need restraint.

The tumor was sent to the laboratory of the Medical College of the State of South Carolina, and the report of the Pathologist, Dr. B. E. Baker, is as follows:

"The specimen of tumor from abdomen of child 4 years of age which you submitted to me not long since, belongs to the variety known as the *teratomata*. These tumors are usually in nature, congenital and very complex as to their histological structure. The one under consideration was probably congenital and it took its origin from the ovary and broad ligament. Histologically it consisted of papillomatous cysts containing mucoid material; the stroma is mixed, both adult and embryonic connective tissue being present, also bundles of unstriped muscle and plates of cartilage. This stroma at certain places looks decidedly sarcomatous. Altogether, I consider the tumor malignant and apt to recur."

Whether this tumor will recur is a question that time only will solve. I am induced to report this case for the reason that it is the only one of its kind in a patient so young that has occurred in my work.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics Under the direction of George Alexander Saxe, M.D.

ANNALES DE MEDECINE ET CHIRURGIE INFANTILES, March, 1901.

1. **A Typical Case of Sclerosis in Plaques in a Little Girl of Seven Years.** By Dr. P. SORGENTE.—Sclerosis in plaques is a very rare disease in children; according to some authors it is unknown in childhood. According to d'Espine and Picot only about thirty cases of sclerosis have been observed in children. The patient whose case is here related had no hereditary history of importance, was born at term under normal conditions and was nursed at the breast until twenty months old. At three years and eight months, after a febrile disease which seemed to have been typhoid fever, she became feeble and could not walk well, and this disability increased until she could not walk without support. The feet finally became spastic and remained in the position of equino-varus. At every attempt to move, tremors were plainly seen in the muscles of the lower limbs. A few months before admission these tremors extended to the upper extremities and the speech became difficult; nystagmus had existed since she was five years old.

On examination the left pupil was found to be inactive to light and to accommodation; the nystagmus was found to be horizontal and rotatory. The facial muscles were normal, except the corrugator supercilii, which seemed to be paralyzed. The state of apathy in which the child was gave her a dull facies; the head turned easily in all directions, but the neck muscles exhibited marked tremors when in action; the tongue was normal; the attitude of the arms was normal, but the lower extremities were in a position of spastic hyperextension, the thighs in adduction, the feet in equinovarus. Passive movements of the lower extremities were very limited and all attempts at such movements were accompanied by tremors. The movements of the upper extremities were incoordinated and tremulous. She could not carry liquids to her mouth; there were no disturbances of sensation, and the cutaneons reflexes were normal, while the tendinous reflexes were exaggerated. Atrophy of the optic nerve in the left eye was noted. The vegetative functions were normal.

Although there was no syphilitic history, mixed treatment was given tentatively. No improvement was noted after three months. The author gives the analysis of eighteen cases of the same kind which he has collected from literature.

2. **Radiopathy in Children.** By Dr. FOVEAU DE COURMELLES (continued). So-called vitalized electric light baths may be given by means of a cabinet inside of which numerous incandescent lamps are arranged so that

they will throw their light upon the patient's body as he stands naked in the cabinet with his head protruding from an aperture at the top, just like in the steam-bath cabinets. A large amount of candle-power must be used. These baths, as well as local applications of electric light by means of an incandescent lamp with a reflector, are indicated in debility, obesity, rheumatism, circulatory disorders, myelitis, sclerosis, dermatosis, dyspepsia and local troubles of various kinds. The blood pressure is raised and the nutrition improves. Sunlight has also been successfully used as a tonic in various conditions of debility by a number of other observers.

The Roentgen rays have been accused of producing a number of accidental lesions on the skin and other untoward effects. Dermatitis, etc., can only result from prolonged exposures to these rays, such as are necessary in examinations of certain kinds. Superfluous hair has been removed by utilizing this action of the rays, but the final effect of the cicatrices is worse than that of the hypertrichosis. Schiff and Freund have recently reported to the International Medical Congress at Paris the various skin diseases in which Roentgen rays may be used. These include the parasitic diseases, lupus vulgaris and affections of the skin in which elimination is the principal factor in the treatment. The author closes by mentioning the extraordinary case of a boy in Massachusetts, whose eyes emit Roentgen rays (?) and ventures the opinion that in all probability in this case there was simply somnambulism? [Mendacity *Ed.*] This boy, Lionel Brett, of South Baintree, Mass., is 11 years old, but intelligent beyond his age. He claims to be able to see through opaque objects, as though his eyes were armed with Roentgen rays. This boy verified a number of diagnoses of fracture and of foreign bodies. When he concentrates his vision upon an object he loses sight of the surrounding lights and sees an atmosphere tinged with a light green tint through which numerous sparks seem to pass. He does not lose consciousness, but all experiments lasting more than half an hour and all sittings repeated oftener than once a week are painful to him. At the age of 9 years this boy exclaimed while playing, "Oh, I see the inside of the hands!"

PEDIATRICS

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Vol. XII. AUGUST 15th, 1901. No 4.

ORIGINAL ARTICLES

HEMOPHILIA NEONATORUM.

By J. G. Wm. Greef, M.D.,
New York City.

IN spite of a very abundant literature on the subject we have not been able to clear up the nature of hemophilia. In the twelfth century we find detailed records by Abul Kasimet Zahrewi; after that nothing is recorded in the literature on this disease until the seventeenth century. after which period, however, numerous communications are at hand.

As we understand hemophilia, it is an hereditary tendency to spontaneous hemorrhages which appear as a result of the most insignificant injuries or even without any apparent cause. The hemorrhages are controllable only with great difficulty, if at all; by artificial means. Hemophilia, as Schroenlein called the tendencies to hemorrhages which are known to us under various appellations, occurs chiefly in the first years of life, later, very seldom.

Steiner[1] describes two cases of bleeders in whom the first symptoms occurred only in the twenty-second year of life. But very few cases of this condition in the newly born have been reported (O. Müller[2], G. Ritter[3] and H. Heppinger[4]) such as those which I present.

Among the causes of hemophilia the greatest importance is ascribed to heredity.

According to Grandidier we seldom, if ever, find bleeders among the progeny of masculine bleeders or where the men are descended from bleeders and where the wife is *not* descended from an hemophiliac; on the other hand, we almost always find bleeders among the children of women who come of hemophiliac families. Very well known in this regard is the family tree arranged by Lossen.

Congenital hemophilia is most closely related to the hereditary type, and, as R. Foerster[5] demonstrated in an example, intermarriage between the closely related has been looked upon as a causative factor. The exact causes of hemophilia have as yet never been proven, and just as in the above mentioned, so also with a number of other causes the views are purely hypothetical.

In seeking for the causes, we meet at every point with hypothesis, and in spite of the very diligent study which has been given to this question no one has been able as yet to furnish any positive proofs of the correctness of his views.

The structure of the blood vessels and the composition of the blood itself might perhaps be looked upon as of the greatest moment.

Let us first consider the question of the walls of the vessels. Here the tendency of the vessels to rupture more easily, and furthermore abnormally small caliber and thinness of the walls of the arteries are the points of moment.

As regards the thinness of the walls and the small lumen of the arteries, this is a condition which we also find in chlorosis and in another condition which furnishes a distinct complex of symptoms, i.e. congenital stricturing of the aortic system; in these, however, we do not meet with spontaneous hemorrhage.

Immerman's theory, based upon certain views of Virchow (thinness of the walls and narrowness of the aorta) is that the hemorrhages occur with such persistence and vehemence and run their dangerous course because of the existence of an unequality between the capacity of the vascular system and the volume of blood, and that as a result a too great lateral pressure is exerted upon the vessels.

Oertel (Therapie der Kreislaufstö'rungen) takes the same view as Immerman, but believes also that hemophilia is to be looked upon as an hydremic plethora. In some cases also fatty degeneration of the intima and hypertrophy of the left ventricle with marked thinness of the right ventricular wall have been found.

As regards the blood itself, it has been impossible to prove any departure from the normal conditions in either the percentage of salts, the amount of fibrinous element with regard to the corpuscular elements, the numerical relationship of the blood corpuscles, or the percentage of hemoglobin.

Grandidier,[6] Lossen and others assume a diminution in the coagulability of the blood, while, according to others, as Hoffmann,[7] the diminished coagubillty occurs only at a late stage after much blood has been lost.

According to v. Recklinghausen there exists a neuropathic diathesis and finally we must mention the view of W. Koch, according to which disease is to be looked upon as a tonic infection.

As a result of the admixture of toxins with the blood this is supposed to pass through the walls of the blood vessels, which have suffered no appreciable changes. Prof. Dr. H. Heffinger also, touching upon the examinations of Klebs, has claimed, in an article on hemophilia neonatorum based upon a carefully observed case, that hemophilia is to be looked upon as the result of an infection. In this case he looks upon an infection by wounds as the cause.

Characteristic and constant lesions could be found upon none of the anatomical examinations.

In general the findings are as follows at the autopsy: The cadaver is markedly anemic, the skin very pale. In the skin there are often found petchiæ chymoses and hematomata, if death occurred through trauma. The internal organs are all very anemic, the spleen is sometimes decidedly enlarged, sometimes normal. The heart is often noticeably smaller, the cavitles but little filled or even entirely empty; frequently fatty degeneration of the heart muscle is found, the left ventricle at times hypertrophied; the aorta and large arteries a number of times attracted attention because of their great narrowness, and frequently the intima was found to be very thin, at times even transparent.

In spite of the wealth of cases of hemophilia in medical literature, and in spite of the zeal which the question of the character of this disease has been studied by the most competent observers in the last decade, there are still many points about this condition which are not clear to us, and I therefore take the opportunity to present to you three cases which I had occasion to observe at short intervals recently.

Case 1.—Mrs. H. H., 23 years of age; primipara; parents and three brothers and sisters perfectly healthy; patient is at normal end of her puerperium, the pelvis being normal and the labor pains of good strength; the delivery is completed quickly; the child, a boy, is born unaided; placenta is expelled by Credé's method, absolutely no bleeding following, the uterus remaining firmly contracted. Five hours after birth a slight swelling is noticeable in the child's right mamillary region, the swelling being diagnosed by the attending physician as a hematoma; after an additional twelve hours the child gives symptoms of great pain when being touched, the pain being increased when any of the joints are handled. The attending physician made the diagnosis of hemophilia with bleeding into the joints. The mother is perfectly healthy; no fever; normal appearance of the umbilical wound. The child, which craves its food, is nursed by the mother and develops symptoms of icterus neonatorum of the most marked form on the fifth day, besides this, large blue and green spots make their appearance on the chest and face, which can not be diagnosed otherwise than as subcutaneous hematomata; icterus subsides after four days. The child gains in weight and shows good development. We have in this case without a doubt an example of hemophilia neonatorum.

Case 2.—This case has to deal with a iv-para at the end of a normal pregnancy. The first three confinements were perfectly normal; mother healthy; has never been sick. The child was delivered in breech presentation without any difficulty by the Smellie-Veit method. Upon cleansing the mouth slight traces of blood were noticeable on the gauze which was used, an incident to which no importanee was attached on account of its seemingly triviality. Twenty-four hours after birth the child showed diffuse swelling on all parts which were handled during delivery—the regions around the trunk, the neck and the shoulders; at the same time we heard from the mother that the child would not take its nourishment and was bleeding from the mouth. Upon examination of the mouth and throat a linear traumatism ⅓ inch long was seen in the median line just in front of the uvula, bleeding steadily. Compression for ten minutes was without avail. Because of the continuance of bleeding, ferrum sesquichloridum was applied but with only temporary effect. The swelling of the parts before mentioned increased, the bleeding in the mouth continued in spite of all treatment and the child died when 48 hours old.

The post-mortem showed absolute anemia of the inner organs, the heart, the lungs, etc. Upon cutting into the aforementioned swellings, the subcutaneous and muscular tissues were found to be saturated with coagulated blood; the knee and shoulder joints also contained effusions of blood. In every other respect the child seemed perfectly healthy and there were no signs of syphilis or of septicemia. The puerperium of the mother ran a normal course.

Case 3.—The third, probably the most interesting of our cases, is worthy of special consideration, especially because in looking through the literature I did not meet with any so pronounced case of hemophilia. The mother, 36 years old, vi-para, comes of a perfectly healthy family; her parents and eight brothers and sisters are living; she does not recollect ever, outside of a few diseases of childhood, having had any illness; she gave birth to an exceptionally strong looking boy after labor pains lasting two and one-half hours; afterbirth followed quickly; uterus well contracted; no bleeding. Labor was finished at 9 p.m.; at 9 a.m., exactly twelve hours later, the physician making the rounds noticed a marked swelling on the left cheek of the child, which was diagnosed, excluding any other possibility, as an hematoma. The child takes its nourishment without any difficulty and otherwise there is nothing striking in the appearance. After twenty-four hours more the child appears extremely anemic and presents the picture of a rapid collapse; the swelling in the cheek had increased. Since the child showed no other external symptoms the diagnosis of internal hemorrhage was made. Exitus letalis after an additional three hours.

The post-mortem of this case presented an hematoma the size of an apple between the fascia and subcutaneons adipose tissue of the left cheek; blood coagulated. Upon opening the thorax the lungs were seen to be absolutely anemic, the right auricle filled with fluid blood, the other chambers of the heart being empty. Upon opening the abdomen the contents were seen in a large quantity of fluid blood; the aortic system and the veins were examined as far as it was possible to do so macroscopically, nowhere could we find any lesion.

The subcutaneous tissue of the whole body and in greater part the muscular tissue also were infiltrated, as could be seen by incisions at various parts with coagulated blood while the joints contained small quantities of fluid blood. I must mention that no organic disease or septic condition could be found in this case, no inflammation of the navel-veins, normal condition of the epiphyses of the femur, the liver. kidneys, etc.

There is no doubt that in these three cases we had to deal with marked cases of hemophilia, and I should again like to draw attention to the fact that in none of these three cases did the mother give any history of the hemophilic tendency either in her own person or in those of her nearest relatives.

The microscopic examination of various specimens removed from the cadaver gave no decided results. Parts of the large glandular structures, such as liver, spleen and kidneys, were examined, as were also blood vessels, muscular tissue and skin. All of these showed conditions not to be differentiated from the normal. The examination of my cases showed very nearly the same condition as Birch-Hirshfeld describes· In the muscular tissue there were hardly any indications of fatty degeneration, the valves, also the intima of the large vessels were delicate, of normal structure, as were also the muscularis and media of the arteries; there was swelling and a fine, granular clouding of the epithelium in the cortical canals of the kidneys. No positive changes were found in the capillaries and intermediate vessels of several organs, since, beyond doubt, the preparation of the specimens had brought about no artificial changes.

The results obtained by most authors, as also those in my cases, show that pathological anatomy offers no help for the complete understanding of the clinical picture.

The accuracy of the diagnosis of my cases hardly admits of a doubt.

From the standpoint of differential diagnosis there is only one other condition to come under consideration, that condition, described by Wintrel and Carl Schroeder and others, as melena neonatorum.

In melena neonatorum, however, the principal symptom is the discharge of blood from the gastrointestinal tract, especially from the rectum.

Only in few cases was there observed free bleeding into the peritoneal cavity in melena neonatorum. In our three cases there was not found, even after the most careful examination either blood itself or the remains of the blood in the gastrointestinal tract, nor was hematemesis noted in any one of our cases.

I feel certain that many of the cases which were formerly classed as melena neonatorum were fatal cases of hemophilia, if one does not want to go as far as to wholly abolish the term melena and to consider this condition simply, as far as no anatomical changes exist resting upon another basis, as a symptom of hemophilia.

It is exceedingly difficult to give a comprehensive decision as to the origin and character of hemophilia, as the mass of the hypotheses which have been brought forward must make clear.

Similarly, too, the theory of a periodically increased blood formation which has been advanced by numerous authors rests upon a weak foundation, as also the hypothesis that the overdistention of the narrow and possibly brittle vascular system of the hemophiliacs acting in combination with an hypertrophic heart may at times lead to a bursting of the overdistended capillaries.

I shall not at this point go over all the hypotheses again since I mentioned the greater part thereof at the beginning of this article. I incline, however, on the basis of my examinations to thebelief that hemophilia rests upon abnormal permeability of the vascular walls.

The existence of an acute disease capable of producing the changes afore-mentioned may in our cases be excluded beyond doubt, since there are absolutely no points to warrant this view.

The large majority of children afflicted with hemophilia succumb to the disease.

Little is to be achieved through the use of styptics; if the children survive the first attack then prophylaxis, which consists of measures to harden the body, strengthening nourishment and the avoidance of external injuries, may be advised as the only rational treatment.

In conclusion I desire to express my thanks to Dr. Ewald for the permission to examine and study the above three cases in the New York Mothers Home of Miserecordia.

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NIRVANIN.

Nirvanin is a local anesthetic agent only one-tenth as toxic as cocaine. It has been used in children without ill-effects. Its use is not attended by any excitement, by any influence upon the respiration or by any weakening of the heart-action. Owing to its relative non-toxicity this drug is of special value to secure local anesthesia of parts the circulation of which cannot be easily controlled, as in operations upon the anal region. Nirvanin anesthesia lasts longer than cocaine anesthesia. Its effects are prolonged. Nirvanin does not irritate wounds, does not interfere with healing by first intention.

Sterilization by boiling does not decompose solutions of nirvanin, does not impair the anesthetic properties of the latter. The most commonly used solutions for hypodermic injection anesthesia are the 1, 2, 3 and 5 per cent. aqueous solutions; for infiltration anesthesia, ¼ to ½ per cent. solution. Luxenburger recommends that the nirvanin be dissolved in sterilized salt solution.—A. P. Heineck, *Can. Jour. M. and S.*, Mar., 1901.

CLINICAL DEMONSTRATIONS AT THE POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

By Augustus Caillé, M.D.
New York.

CASE 1.

Hysterical Hoarseness.—The first case to which I shall draw your attention this morning is one of hysterical hoarseness in a boy of 7. We will get him to speak, and you will notice that he has a trembling, husky voice. The lad is not troubled with adenoid vegetations or large tonsils. A laryngoscopic examination of his larynx shows normal mobility of the vocal cords and no undue hyperemia—no ulceration; his general condition denotes robust health. The mother, who accompanies the boy, has the same unsteady, trembling voice, and makes the following statement: Within a short space of time she has lost two children from scarlet fever and has become uncontrollably nervous from shock, and it appears that the boy has become influenced in the same way and presents a sympathetic imitation of the mother's condition. It is a well known fact that anemic and neurotic school children may acquire various forms of habit spasms or tics by simple association with an afflicted playmate, and the present instance may be classed with this group of cases.

CASE 2.

Pericarditis with Effusion.—Here is a lad I should judge to be about 7 or 8 years old. He had a moderate fever with a pulse of 140 and respiration 30 to 40. He has marked dyspnea in the recumbent position. Such symptoms invariably point to an obstructed circulation, which we will endeavor to locate. On examination we find the lungs free; there is no fluid in the abdomen; the urine is free; the area of heart dullness, however, is much increased, the heart sounds are quite feeble and the heart shock is absent. If the increased heart dullness were due to a hypertrophic or dilated condition of the heart muscle, both heart impulse and sounds would be distinct; their absence shows that there must be something between the heart muscle and the chest wall that interferes with the conduction of the sound and in this instance it is fluid. The boy has an acute pericarditis with massive effusion.

Now a word or two as to the management of this case of pericarditis, which is of rheumatic origin. The boy was here some months ago and gave a distinct history of rheumatic infection. We know that the rheumatic poison has a great predilection for the serous membranes. So from the rheumatic poison which gets into the circulation you may have rheumatism of the joints, the pleura or pericardium, in fact, any serous membrane can become affected, and occasionally all of them; even the peritoneum gives evidence of rheumatic infection.

When this boy was here some months ago with rheumatic polyarthritis and pericarditis we gave him the nearest specific we have for the rheumatic infection and that is salicylate of sodium combined with iodide of potassium.

℞ Sod. salicyl........................gr.v
Pot. iodid........................gr.ii
Four times a day in water.

Rest in bed, a daily warm bath and fluid diet were ordered and in about two weeks the pericardial effusion had entirely disappeared and the friction sound of dry pericarditis could be heard. We then sent the boy home and after an interval of three months he had a second attack. We will give him the same treatment and will expect him to improve rapidly. When again convalescent he should have the benefit of sunshine and country air.

CASE 3.

Acute Bronchitis with Asthmatic Attacks.—Here on the table is a little girl with acute bronchitis. Her lungs are emphysematous, and we are told that she is subject to asthmatic attacks. We have observed her in one of her attacks of dyspnea and noticed that she became cyanotic. Evidently there is a very tenacious secretion in the pulmonary air cells which should be liquefied and expectorated if possible. Iodide of potassium is particularly indicated in bronchitis with emphysema.

℞	Potass. Iodid.	ʒi
	Liq. ammon anisat.	ʒss
	Syrup	ʒss
	Aquæ q.s. ad	℥iii

M. et Sig.—ʒi q. 4 h.

After a few doses of this medicine the asthmatic symptoms will disappear and she will be very comfortable until she gets another attack of bronchitis. Children who have had whooping cough are apt to develop the above symptoms and an effort should be made to establish a cure through a change of climate.

CASE 4.

Massive Pneumonia of Right Side.—You notice that this child, 9 months old, is apparently very ill. She has a very hot body, rapid breathing and restlessly tosses about. On percussion we find dullness over the entire right lung. On the left side there is pulmonary resonance, and the breathing is about normal. On the right side the breathing is indistinct, harsh and tubular and when the child cries or moans you do not get a very marked fremitus, i.e. fremitus is diminished. This points to the possibility of an effusion being present in addition to the pneumonic consolidation. I will insert an aspirating needle into the pleural space to make sure of the absence or presence of serum or pus. In puncturing you simply select a site that is dull and run your sterile needle in between the ribs after cleansing the skin with ether. This can be done without difficulty, and upon aspirating and withdrawing the needle, in this case you will notice that we fail to draw fluid. The dullness means lung consolidation, and in the absence of a complication the treatment will be that of an ordinary pneumonia.

Venesection would probably be indicated in an adult in this condition; in very young children it gives very poor results. We will have to depend more on heart stimulation. One of the best heart stimulants is camphor—for children and even for adults. If you will inject 5 to 8 drops of camphorated oil 1-5, hypodermically, you will do more towards stimulating the heart than by any other internal medication. Some children will take camphor by mouth; those who are older and who have a good stomach can take ½ to 1 grain of camphor with a little sugar or chocolate by the mouth every two or three hours. But where children have a rebellious stomach (and in most infectious diseases there is vomiting and a rebellious stomach) they do not take kindly to camphor by the mouth and then I always make use of it hypodermatically or even per rectum, and in this case I judge that an injection of 5 to 8 drops under the skin would be proper treatment, to be repeated every two or three hours. The bowels should move freely; the high fever may be reduced by a warm bath or cold sponging, and in case of retention of urine, which symptom is frequently observed, the catheter must be used.

CASE 5.

Pneumonia with a Possible Meningeal Complication.—There is marked stiffening of the muscles of the neck in this child and motion or attempt at motion of these neck muscles is evidently very painful. Although the child is exceedingly weak, the head on account of the muscular rigidity does not fall over from side to side. There is dulluness at the apex of the right lung on percussion. The pneumonia which the child had has not completely cleared up and there is evidently some meningeal irritation. The skeletal muscles are rigid and tense —very tense indeed for such a flabby child. Without more definite signs of meningitis I would not like to say that we have a true meningitis here. The child has no fever but there is certainly a meningeal irritation.

Vomiting is one of the marked symptoms in this case and this is probably due to an infected stomach and not to meningeal irritation. It would be proper to wash the child's stomach two or three times and stop giving milk food for twenty-four hours. If after thoroughly washing the stomach and giving proper food the vomiting still continues we should be perfectly justified in doing spinal puncture to establish positive diagnosis. The puncture fluid will be turbid in case of a complicating meningitis.

CASE 6.

Rheumatic Affection of the Tendons.—This boy has a rheumatic inflammation more in the tendons than in the joints It is so marked that at night his feet swell and he is unable to stand or walk. You can see from a distance that all the tissues surrounding the joint, particularly in the right foot, are infiltrated and quite tender to the touch. This boy has had several attacks of rheumatic fever with swelling of the knees and ankles, and the peculiarity of it is that every time he gets an attack he complains of pain in his abdomen, so that the legs have been entirely ignored and attention has been directed to the abdomen. At his last sickness, when the physician was called in and the boy complained of pain in the abdomen, appendicitis was suspected; but a surgeon was consulted who excluded appendicitis, so no operation was performed. You will often find in children, and adults too, who have rheumatism, that they frequently complain of intense pain *in the abdominal region* which on careful examination may be located *in the abdominal muscles.* Our patient must rest in bed and should receive internally the dose recommended in case 2 and a warm bath every day. The legs and feet must have rest.

Of course, it is always wise in a case of this nature to begin treatment with a good dose of calomel and jalap.

When the acute symptoms are over massage is the proper thing. If you do a post-mortem on a chronic case of this kind and open up the joints and tendon-sheaths you will find that the rheumatic exudate is not a liquid one, but is gelatinous, and you cannot get rid of that by medication. You have got to press it out, get rid of it mechanically, and massage is the only remedy in those cases.

INFANTILE ECZEMA.

Dry, vesicular and papular.

℞	Zinci oxidi.	
	Amyli	
	Adipis lanæ	āā 5
	Petrolati	10
	Hydrarg. oxid. flav.	0.25-0.50

M. ft. pasta.

Leistikow, *Medical Record.*

HEMORRHAGIC DISEASE OF THE NEW-BORN—A CLINICAL REPORT OF TWO CASES.*

By Adelaide Brown, M.D.,
Attending Physician, Alexander Maternity Hospital,
San Francisco, Cal.

CASE I.

BABY F., female, weight 8 pounds 4 ounces, child of a multipara, was born after a four-hour labor in February, 1900, with a degree of asphyxia not accountable for by the labor. It was restored after hot and cold baths and some friction. Forty-eight hours later a meconium-movement mixed with a large amount of tarry substance was passed. The child's skin was dry and sunken and bluish yellow in color; no elevation of temperature. Blood continued in the stools two days but diminished in quantity after twelve hours. Ecchymoses developed on the abdomen and the emaciation was very marked—in all a loss of 23 ounces in three days from birth. The increase in weight began on the fifth day and by the twenty-eighth day the birth-weight was regained. The child was bottle-fed.

CASE 2.

Baby R., male, weight 8 pounds 2⅔ ounces, child of a primipara 34 years old, was born after twelve hours of normal labor; no asphyxiation; no unusual pressure or long delay in birth canal; first day vomited dark fluid; thirty-six hours after birth hemorrhage from the bowel began; vomiting of black blood continued. The child became very weak and pale the skin was bluish yellow, with marked shrinking, giving it a dry, withered appearance. During the day nine movements, all containing blood, were passed. The temperature rose to 39.3° C. (103° F.). In the second twenty-four hours two hemorrhagic stoools were passed. The weight this day (the fourth from birth) was 6 pounds 14 ounces, a loss of 20 ounces. This child was nursed, the nursing supplemented by modified milk until the birth-weight was regained. The cord dropped normally in both cases. Breast milk was fed by dropper during hemorrhage and for several days after.

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* Read at the State Medical Society of California, Sacramento, April, 1901.

The blood count in the first case was taken but once, on the twenty-eighth day:—

White corpuscles	11,000
Red “	3,340,000

In the second case on the day after the severe hemorrhage the blood count was:—

Hemoglobin	30 to 35 per cent.
White blood corpuscles	15,450
Red “ “	2,620,000

Five days later:—

Hemoglobin	45 per cent.
White blood corpuscles	9,200
Red “ “	2,840,000

Twelve days after:—

Hemoglobin	50 to 55 per cent.
White blood corpuscles	10,330
Red “ “	2,880,000

The blood count of a normal baby to parallel these was:—

Hemoglobin	85 to 90 per cent.
White blood corpuscles	9,000
Red “ “	5,000,000 plus.

The treatment in these cases was as follows: Fluid extract of ergot (2-drop doses) was given and vomited, as also was tincture of the chloride of iron by the second case. An enema of weak astringent solution was tried on case 1. It caused an increase of bright blood and great tenesmus. Gelatin was given and retained, and with the addition of 5 drops of brandy every hour was the only treatment persisted in.

In case 1 gelatin tubes containing about 1 dram were heated and diluted and fed to the child. The effect was very perceptible. After this gelatin was given every two or three hours. In the second case only gelatin was tried. Cox's gelatin soaked and made of the consistency of wine jelly was used and fed to the infant, a dram with 5 drops of brandy every hour for twelve hours, then every two hours, later every three hours for several days. There was no vomiting and the hemorrhage decreased rapidly after the first doses. In both cases the infants were kept warm and absolutely still, changed without handling and were fed "weak formula" milk or diluted mother's milk, with the dropper. The extreme severity of these cases and the uniformity of the two results under this treatment seem to indicate that there is some strong ground for the theory that unnatural fluidity of the blood is one cause of hemorrhagic disease of the new-born.

The action of gelatin as a hemostatic in uterine hemorrhage has been well established. A bleeder in two previous operations for vesico-vaginal fistula was later the subject of a Porro at the Alexander Maternity Hospital. Large quantities of gelatin were given before the operation; no hemorrhagic tendency appeared; its use hypodermatically is recognized as of value in hemoptysis and its use as a local hemostatic has strong advocates in the French school. That hemorrhage in the new-born often has other lines of causation, such work as that of Dr. Elizabeth Mercelis and Dr. Kilham, of New York, and of Dr. Nicholson, of Philadelphia, goes to prove. The New York report of 18 per cent. of cases of hemorrhage more or less severe in the infants of fifty-four consecutive deliveries shows a marked febrile course, and later occurrence of the hemorrhage (six to fifteen days) than the two cases that are here reported.

The clinical history of these cases corresponds more exactly with the classical description of Buhl's disease. The icteric-cyanotic skin, extreme wasting, marked gastrointestinal hemorrhage, ecchymosis, absence of continuous temperature and time of occurrence make points of agreement.

The New York cases stopped after thorough isolation and disinfection, and this with the late development after birth in most cases and the finding of a constant diplococcus resembling the pneumococcus in its morphology makes the infectious origin of these cases probable. The New York mortality was 50 per cent., though many of these cases were reported as mild.

The gelatin treatment has in its favor that no quantity seems to disturb the child; it is at hand in most houses, and certainly meets, clinically, the indications of increased fluidity as a cause of certain cases of hemorrhage in the new-born.

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PRACTICAL POINTS IN INFANT FEEDING.

Habitual vomiting or regurgitation is almost always due to excess of fat; if not to this, to excess in quantity. For an infant with such symptoms one should never begin with any formula in which the fat is more than twice the proteids, and often equal percentages are better.

Habitual colic is nearly always from an excess of proteids. For such a condition one should not give more than one-third as much proteids as fat, and usually at first very low percentages. This condition is usually associated with the presence of curds in the stools, which requires the same treatment.

Something should be said regarding the changes required in milk modification during very hot weather. At such times both the proteids and fat must be reduced but particularly the latter. An infant can no more digest a high percentage of fat during hot weather than a soldier in a tropical climate can. It is seldom wise in any case, even of perfectly healthy children, to have the fat in the summer months over 3 per cent. and during short periods of excessive heat it should be reduced to 2 per cent.—Holt, *N. Y. Med. Jour.*, Jan. 12, 1901.

EDITORIAL COMMENTS.

Surgical Pediatrics

Dr. Samuel W. Kelley in his address as Chairman of the Section on Diseases of Children at the meeting of the American Medical Association at St. Paul pleads for the advancement of surgical pediatrics (vid. *Journal of the American Medical Association*, July 20, 1901.) After pointing out, by a rapid review of well known textbooks, how far medical specialization in this branch is ahead of surgery, he urges specialization in surgical pediatrics in these forceful phrases:

"As in medical pediatrics, so in surgical, we meet abnormalities found only in children, and also we meet those which while they occur in adults as well as in children, are in the latter marked by different phenomena, manifest a different behavior, require a different treatment and often bring a different result from what would be usual in the same affections occurring in persons of mature years. It is only necessary to point out that the malformations, the early evidences of hereditary syphilis, separation of the epiphyses, croup, rickets, enuresis, cancrum oris and noma, as well as certain herniæ and hydrocele and certain varieties of tumor, belong to the class of troubles found only in children. While intussusception, prolapse and polypus of the rectum, hip-joint disease, post-nasal adenoids, enlarged tonsils, foreign bodies in the nose and ear and cervical adenitis, although not exclusively found in children, practically belong to the surgical affections of childhood. Concerning the fractures and dislocations, empyema and nearly the whole remaining list of surgical ailments —not to mention orthopedics or numerous affections of the eye and skin—we who have given the subject special study and are accustomed to surgical work among children know how common they are, and to a certain extent how different they are from similar afflictions in the adult. We are aware what peculiarities surround operative work upon children; how ill they bear hemorrhage or cold or prolonged shock, and how wonderfully they recuperate once the stress of the storm is past. The effects of anesthetics and of antiseptics, the art of dressing and bandaging and the use of medicines and diet in surgical cases—all these differ in children from similar cases in the grown-up. In view of all the splendid progress that has been made it may appear ungrateful and hypercritical to seem dissatisfied; and yet to be satisfied is to stop progress, and there remains a great deal to be done to advance this department. The all-around pediatrist as often finds the surgeon as the physician at fault in his work upon children, for want of special knowledge of them—mistaking the condition, miscalculating the probabilities, misjudging the vital force. In fact, the profession at large has not yet even sufficiently recognized the necessity and importance of this branch. In the medical journals and in the medical societies one finds evidence that too little attention is paid to these surgical subjects. Examine your journals and the program of any medical society, even a pediatric society, and see what a small percentage of papers is on surgical topics in pediatrics. Some of those which should be found in the pediatric appear in the transactions of other specialties." T.

Infection by the Urine in Convalescence from Typhoid

In the *British Medical Journal*, November 24, 1901, Dr. Walker published an article on the danger of the urine of persons convalescent from typhoid fever. He cited a very interesting account of an outbreak in a locality where it had not occurred before, following the return of a soldier who had been stricken with typhoid in South Africa. In the issue of the same journal for July 13, 1901, Dr. T. Clifford Allbutt narrated the history of an epidemic in an isolated community, which, at the time of its occurrence, he attributed to contamination of the water supply by the feces of a patient who had recently had typhoid. However, in view of what has been recently written on this subject he thinks it far more likely that the urine is a more frequent source of danger. Considering the results of bacterial examinations made for him, he is satisfied that typhoid bacilli do not survive in the stools long into convalescence, even if until that period.

He accepts the statement of Horton-Smith and others that typhoid bacilli are excreted in large numbers in the urine until convalescance is far advanced.

From these considerations arises the necessity of rendering the urine sterile; this may be done by some one of those newer remedies that liberate formaldehyde when excreted by the kidneys. Otherwise each patient must be made to fully appreciate that he is a menace to the community so long as he continues to scatter his urine carelessly about without disinfecting it. T.

Is Bovine Tuberculosis Transmissible to Man?

Koch's views in regard to the non-transmissibility of bovine tuberculosis to man, as set forth in his address delivered before a General Meeting of the British Congress on Tuberculosis, have by this time become pretty generally familiar throughout the lay and medical worlds. He has stated fairly positively what cannot be demonstrated except indirectly. The indirect demonstration, however, he regards as fairly conclusive, as he says: "It is well known that the milk and butter consumed in great cities very often contain large quantities of the bacilli of bovine tuberculosis in a living condition, as the numerous infection experiments with such dairy products on animals have proved. Most of the inhabitants of such cities daily consume such living and perfectly healthy virulent bacilli of bovine tuberculosis, and unintentionally carry out the experiment which we are not at liberty to make. If the bacilli of bovine tuberculosis were able to infect human beings many cases of tuberculosis caused by the consumption of alimenta containing tubercle bacilli could not but occur among the inhabitants of great cities, especially the children." He holds that tuberculosis can only be assumed with certainty to be caused by alimenta when the intestine suffers first. Only twice does he remember having seen primary tuberculosis of the intestine. He cites statistics to prove how exceedingly rare this affection is, and does not think it at all necessary to have to assume infection by the bacillus of bovine tuberculosis to explain the few cases of primary intestinal tuberculosis that do occur. He also considers that he has conclusively proved by experiment that human tuberculosis cannot be transmitted to animals. These propositions are not new but have never before been *so positively* enunciated by an authority on this disease.

In an address before the Canadian Medical Association in August, 1899, Professor Adami called attention to how scanty the evidence was to prove the transmission of animal tuberculosis to man. He also stated that human tubercle bacilli when inoculated into cattle would produce only local and transient effects. In a paper read before the British Medical Association, August, 1899 (PEDIATRICS, vol. viii, No. 8, 1899) Dr. George F. Still, after analyzing 269 necropsies on tuberculous children under twelve years of age, concluded that the commonest channel of infection with tuberculosis in childhood is through the lung: that infection through the intestine is less common in infancy than in later childhood; that milk therefore is not the usual source of tuberculosis in childhood, perhaps due to precautions taken in boiling and sterilizing; that inhalation is the commonest mode of infection in the tuberculosis of childhood and especially infancy, etc. So it is evident that medical thought has been tending in this direction for some time. This is a subject of vast import and nowhere can the adage "*festina lente*" be more fittingly applied.

T.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE--SECTION ON PEDIATRICS.

Stated Meeting, February 14, 1901.

WILLIAM L. STOWELL, M.D., Chairman.

Vomitus Nervosus and General Hysteria.—Dr. LOUIS FISCHER presented this case. The child had first come under observation in 1893. She had walked at the end of the eighteenth month; had cut the teeth with difficulty, and as a result of improper feeding had developed rachitis. There was a history of persistent epigastric pain, increased after the ingestion of food and lasting for the past six years. Chemical examinations of the gastric contents showed hyperchlorhydria; the child was always hungry; she had vomited quite frequently, usually mucus. There was no distinct psychical character to the vomiting. She had been habitually constipated in spite of every effort by both medicinal and hygienic measures to relieve it. Acetone had been found in the urine, indicating a toxemia. She complained of pains in various parts of the body and was decidedly nervous. The superficial circulation and the mental condition were poor. The diagnosis was nervous vomiting, and the condition dated back to a severe attack of pertussis. The only medicinal treatment that had controlled the vomiting was the administration of large doses of the bromides.

Dr. W. M. LESZYNSKY said that the records of the vomiting had been kept by the patient herself or by members of her family so that its accurrcy might well be called in question. In the cases of so-called nervous vomiting that he had seen there had not been true vomiting but an accumulation of fluid in the esophagus and its subsequent ejectment by a spasmodic action of the esophagus. It was important therefore that such a patient as this be kept under trained observation. There did not seem to be much interference with the girl's nutrition and the condition seemed to him rather one of vicious habit aggravated by her environment and the lack of intelligent control. He would be opposed to the use of bromides or other sedatives—indeed, very little could be expected from medicine. The speaker said there was a disposition on the part of most physicians, not neurologists, to call a case hysterical even in the absence of hysterical stigmata.

Dr. MAX EINHORN said that the fact that a considerable quantity of fluid was vomited at a time partly answered Dr. Leszynsky's criticism regarding the question as to whether there was true vomiting or only regurgitation. The affection seemed to him a hyperesthesia of the stomach. The treatment that he would advocate would be measures to increase the general nutrition, encouraging the patient to refrain from vomiting and keeping her quiet and under the influence of bromides when the vomiting was severe.

Dr. FISCHER said that he too looked upon the case as one of hyperesthesia of the stomach. The child had been under observation for a number of years and he had had abundant opportunity to observe the true character of the vomiting. Feeding per rectum had been employed for weeks at a time, yet the vomiting had persisted.

A Case of Diabetes in an Infant.—Dr. WM. E. YOUNG reported this case. The patient, a male infant of 6 months, had been admitted to the Foundling Hospital. The child was found to be diabetic and it died just one month later of bronchopneumonia. As to the frequency of this disorder in early life it should be noted that Holt had quoted a series of 1,360 cases, only eight of which had been under the age of ten years. The prognosis was very unfavorable in young children, death often resulting from intercurrent pneumonia.

Dr. L. FISCHER said that he had seen two children last year, eight and six years old respectively, who had suffered from a temporary glycosuria following pneumonia.

Dr. STOWELL said that he had seen the infant whose case had just been reported and its peculiar appearance had been quite similar to that presented by many adult patients. The kidneys were swollen to twice the normal size.

A Simple Apparatus for Modifying Cow's Milk.—Dr. C. HERMANN exhibited such an apparatus. He said that he had made use of the data published recently by Dr. Holt. If milk were allowed to stand the upper one-third gave 10 per cent. fat and the fats were in proportion to the proteids as 3 to 1. The upper half contained 7 per cent. fat and the proportion to proteids was as 2 to 1. The apparatus presented consists of a glass cylinder having an opening both above and below and being graduated into 1,000 cc. The milk is removed from below through a stopcock leaving the upper layer undisturbed. The cylinder is also graduated so as to show the fat and proteid percentages. In using the apparatus the milk is introduced up to the 1,000 cc. mark and the cream is allowed to separate. If it is desired to use milk containing fat and proteids in the proportion of 3 to 1, it is only necessary to allow the milk to flow off until it reaches the mark 3 to 1. If 3 per cent. fat is desired one has only to take 300 cc. Analysis showed that the proteids bore to the sugar a nearly fixed ratio, i.e. 1 to 1.3. per cent. A small graduated glass accompanies the cylinder and is used for determining the quantity of milk sugar required. The apparatus was not only simple but allowed of an indefinite number of modifications. It could also be used to determine the quality of the milk, for after the cream had separated one could read off directly the percentage of cream. The specific gravity of the lower milk could be taken and from tables the composition of the milk readily calculated.

Dr. W. L. Baner said that he was favorably impressed with the apparatus though he had not had an opportunity of testing it practically. He had been using the Chapin dipper for some time and had been much pleased with it, not ouly because of its simplicity but because it also allowed of many modifications.

Dr. Baruch said that the dipper had the distinct advantage over the apparatus presented and others of its class in that the milk could be obtained fresher for the infant. In this city when milk reaches the consumer the cream has already separated and is ready for the dipper; if, however, the milk must be mixed up again and placed in the apparatus for the cream to once more separate there will be a delay of a number of hours.

Dr. Hermann replied that it was only necessary to have the milk stand four hours for the cream to separate.

Vaccination Clinically Considered.—Dr. Frank S. Fielder read this paper. He said that it was convenient to divide vaccination into three stages of one week each, viz.: (1) A mild week of invasion before the appearance of the areola; (2) a severe week during the existence of the areola; and (3) a mild week beginning with the fading of the areola and dessication of the pustule and ending with the shedding of the crust. The most common variations observed were in the extent of the areola and the severity of the constitutional symptoms. If the vesicle were typical in appearance and the areola were of a bright red color the condition might be looked upon as normal even though severe; but if the areola were of a livid purple and hemorrhagic appearance the case was probably one of mixed infection. Ill-nourished and badly fed babies often respond atypically to vaccination. In eczematous infants he had not observed any special reaction from vaccination. Apparently, in some cases at least, the raspberry excrescence affords some slight temporary protection and occasionally a raspberry and a typical vaccination develop side by side. A raspberry excrescence was evidence of poor virus. If a true primary vaccination runs an abortive course when a careful vaccination has been done with unimpeachable virus the case may be looked upon as one of partial immunity. The possibility of inoculating tuberculosis by bovine virus was extremely small, for tuberculosis in calves of four to six months of age was an exceedingly rare occurrence. The skin eruptions usually develop about the time the areola appears. The most frequent of these is a roseolous rash resembling the diphtheria antitoxin rash. This eruption might be distributed all over the body. There may or may not be any itching. The rash subsides in from two to four days. Sometimes the rash resembles erythema multiforme and is associated with constitutional symptoms. Occasionally a scarlatiniform eruption was observed. It disappears often within twenty-four hours and is followed by desquamation. Septicemia of virulent type had been occasionally observed, most commonly after the use of humanized virus. He had seen only two cases of suppurative adenitis in connection with vaccination. True erysipelas as a complication of vaccination was certainly very rare at the present day. Tetanus was a rare complication, Dr. Huddleston having been able to find only twelve cases on record and all but one of these had terminated fatally. By generalized vaccinia was meant an eruption passing through the successive stages of papule, vesicle and pustule, coming on a few days after vaccination and diffused more or less extensively over the body. Some authors claim that every case is an auto-inoculation, but this did not explain all of the cases. The diagnosis might be difficult in some cases, the resemblance to varicella often being quite marked. The diagnosis could be made positive bp taking some of the lymph from the vesicle and inoculating another place on the body, when, of course, if the typical vesicle developed one would have positive proof that the eruption was one of vaccinia. The speaker said that he had examined 132 vaccination scars in 34 children within five or six months after he had vaccinated them. A large percentage of poor scars were seen in spite of the fact that all of these vaccinations had run a typical course. He was of the opinion that the appearance of the scar was a very unreliable guide in determining whether or not a particular case is immune. Immunity was usually secured in from seven to ten days, occasionally a few days later. If the person be vaccinated on the day of exposure or even on the next day he is likely to escape the disease altogether or only have varioloid. If a smallpox eruption appears before the vaccination has reached the stage of fully developed areola the smallpox will modify and interfere with the vaccination. Immunity occurred even through the vesicles were interfered with and hence it was evident that the local lesion was not a necessary part of of the process which confers immunity. This fact should be borne in mind for it was sometimes desirable in infected cases to open and cleanse the vaccination vesicle. Little or no immunity was conferred upon the fetus by vaccinating the mother, as shown by the fact that almost always the child when born can be vaccinated. Children born while the mother has smallpox usually contract the disease. If the stage of the latter were early and the child at once vaccinated it might escape, but usually the smallpox eruption appears before immunity can be conferred and then death is apt to result. The period of immunity was exceedingly variable. In general it might be stated that a severe case of smallpox was rarely seen within ten years after a successful vaccination, and after a period of five years even varioloid was not often met with. In exceptional cases neither smallpox nor vaccination seemed to protect the person against subsequent infection. The period of immunity generally lasts five years. According to some, a person might be successfully revaccinated while still immune to smallpox. At least 75 per cent. of the children in the primary and grammar school grades in this city had been found susceptible to revaccination. The resident physician of North Brother Island had sent him a list of twelve cases of children, varying in age from two and a half years to six years, who had been successfully vaccinated in infancy and yet who had been successfully revaccinated. That revaccination establishes lost immunity had been demonstrated by overwhelming proof. Statistics show that revaccination affords better protection against smallpox than an attack of smallpox, and that revaccination gives better protection than a first vaccination. To preserve immunity, therefore, revaccination should be performed at stated intervals just as conscientiously as primary vaccination. Secondary vaccinations do not follow as typical a course as primary ones. Instances were on record where the formation of the vesicle had been delayed twelve, eighteen and even thirty days.

The speaker insisted that all virus should be subjected to a rigid physiological test, preferably upon young and previously unvaccinated children before being placed on the market. He preferred the glycerinated lymph. He had seen no statistics to prove that there was any advantage in using multiple scarifications. The simplest method is to scarify a small area with a needle. If this area were more than ⅛ inch in diameter and an active virus, like that of the New York City Board of Health, were used, the reaction would be unnecessarily severe. The virus should be thoroughly pricked in and the spot left uncovered for a few minutes. The best dressing was a loose sleeve or stocking lined with gauze. The use of vaccination shields was of questionable value. In his opinion an infected vaccination wound should be treated by the physician on general surgical principles just as would be done with other infected wounds.

Some Remarks on the Preparation of Vaccine.—Dr. John H. Huddleston explained in this paper the mode of preparation employed by the New York City Health Department. He said that since 1876 bovine virus had been used by the health department of this city. While goats, sheep, pigs and several other animals can furnish virus in an emergency, they were all inferior to calves or cows in the amount of the virus, its quality and the ease with which the vesicles can be handled. The calves are chosen for their health and the quality of their skin. After physical examination, to exclude disease, the calves are used, and, after the collection of the vaccine, are killed, and a post-mortem examination made to make sure that there is no disease present before the virus is placed on the market. Linear incisions are made because with them larger and more typical vesicles are obtained. Into these incisions the seed virus is rubbed—usually glycerinated virus which has been preserved two months or longer. No cover is placed over the vaccinated area because nothing of that kind has been found which would stay in place satisfactorily, and because even when the cover did stay in place it was not found that the virus was more free from extraneous matter than when only protected by the natural crust. Usually on the sixth day the virus is collected by curetting out the vesicles, weighing them and running them through a mill through which flows a mixture of 66 per cent. glycerine and 33 per cent. water. Pure glycerine interferes with the activity of the vaccine while the diluted glycerine does not interfere with the efficiency of the virus though extraneous organisms are destroyed. Unfortunately saprophytes were found in all fresh virus but they usually disappear in the course of a few weeks.

Remarks on Specific Organisms in Vaccinia.—Dr. Anna W. Williams sent a communication on this subject, which, in her absence, was read by Dr. R. J. Wilson. She stated that in 1892 certain peculiar bodies had been described which had been claimed to be the cause of vaccinia and variola. There had been much dispute over the nature of these bodies. They were constantly present in vaccinia, variola and cowpox and were not found when vaccination fails. Their arrangement often suggests division. They are motile and in the older lesions are larger and more irregular than in the early lesions. Dr. Williams said that the bodies were plainly seen in the subaceous glands and they stain readily. She was inclined to believe in the parisitic nature of these vaccine bodies.

Dr. W. A. Dunckel said that he had recently seen a colored man who had been vaccinated about three weeks before. At the same time there had been an initial lesion and a macular syphilide, well marked, on the chest, shoulders and back, and close to the vaccination scar was a pustular eruption. Apparently the latter was a tubercular syphilide, but the difficulties of diagnosis were obvious. He had recently seen a vaccination in which the development of the vesicle had been delayed until the twelfth day. Not long ago he had vaccinated a person, and as this vaccination had apparently failed he had revaccinated the person on the ninth day. Eight days later he had been surprised to find that a fine vesicle had formed at the site of the first or supposedly abortive vaccination. Barlow had shown that a supernumerary finger could be vaccinated and removed on the fourth day and that about one month later the child could be vaccinated and that the second vaccination would run an accelerated course.

Dr. F. H. Bartlett said that in an extensive dispensary experience with vaccination he had found in children from nine to thirteen years of age over 60 per cent. could be successfully vaccinated. He had found the glycerinated lymph of the health department greatly superior to that formerly supplied on quills. With this glycerinated lymph there was a notable absence of excrescences. The latter, in his experience, did not confer immunity for he had frequently performed successful vaccinations within a few weeks after one of these abortive vaccinations. It was his practice to rub the skin well with a weak solution of carbolic acid just before making the scarification.

Dr. David Bovaird said that he desired to challenge the statements made against the use of vaccination shields. Of course, theoretically there should be no objection to them; such objections as had arisen had been founded on the difficulty of keeping them in place. He preferred to take the large wire shield and bind it on firmly with a long strip of "ZO" adhesive plaster. He had had these remain in place for several weeks without even once changing the plaster. Such a shield not only protected the vaccination wound from infection from the clothing but protected it also from irritation. Persons who had not previously worn these shields would cheerfully testify to the increased comfort which they give.

Dr. C. G. Kerley said that he had vaccinated nearly 700 persons and the only ones giving any trouble had been those in which the shields had been applied against his advice. He favored putting a bit of protective gauze over the wound after it had thoroughly dried and keeping this in place with a strip of adhesive plaster. The tension caused by the shields seemed to interfere with the circulation of the parts and favored suppuration.

Dr. Fielder, in closing the discussion, said that it was common in cases of revaccination in which the period of incubation was long, to believe that the vaccination was a failure. If, then, revaccination were practised it was common for both vaccinations to "take." He was convinced that hot weather had very little to do with the efficiency of the virus unless it was kept in an ordinary room during such weather. Experiments showed that virus could be heated artificially for two or three days or be frozen with liquid air without having its efficiency impaired. If one employed good active virus it was perfectly feasible to secure successful vaccinations even after the employment of antiseptic solutions on the arm; however. cleansing with alcohol was all that was required. His own experience with shields had been that trouble resulted where they were employed in young infants. Anything which constricts the arm, even a piece of rubber plaster, seemed to him inadvisable. Most shields caused more or less maceration.

INFLUENZA IN CHILDREN.

℞	Sodium benzoate	of each 30 grn.
	Antipyrine	
	Camph. tinct. opium	4 dr
	Sparteine sulphate	2 grn.
	Pure ext. licorice	1 dr.
	Syrup tolu	to make 2 oz.

Shake well—teaspooful four times a day for a child six eight years old.—*Merck's Archives*, Feb. 1901.

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, February 12, 1901.

The President, Dr. THOMPSON S. WESTCOTT, in the Chair.

Dr. J. D. TARGET reported one case of **Jacksonian Epilepsy** and exhibited another child that had curious convulsive movements which occurred spasmodically and were thought to be due to Jacksonian epilepsy.

Discussion by Dr. Griffith and Dr. L. J. Hammond.

Dr. J. P. CROZIER GRIFFITH exhibited three patients. The first a case of **Splenomegaly** in a child about 3 years of age in which there was also enlargement of the liver and very slight anemia without changes in the white cells, suggestive of leukemia. The second case was one of **Abdominal Enlargement with Irregular Fever** in a colored child about 8 years of age, in which there was a mass in the lower central portion of the abdomen. This case was thought to be one of tubercular peritonitis. The other case was that of a child 1 year of age. Under ordinary conditions the child presented moderate cyanosis, but under excitement, emotional or muscular, the child became cyanotic to an extreme degree. The examination of the heart showed an absence of marked enlargement on the right, but there was a decidedly accentuated second pulmonary sound. The accentuation of the pulmonary sound pointed against the possibility of a pulmonary stenosis; a murmur characteristic of patulous ductus arteriiosis, was not heard at the time, and Dr. Griffith suggested that the condition was very probably due to an abnormal arrangement of the blood vessels.

In discussing the case of splenomegaly Dr. HAND said: "I was surprised in examining stained preparations of the blood to find one intracorpuscular pigmented malarial organism and two suspicious extra-corpuscular bodies; what bearing this may have on the case I cannot say, especially in view of the observation by Moncorvo and others, that malaria does not as a rule produce marked enlargement of the spleen in children."

Dr. J. A. SCOTT.—We certainly know very little of conditions like that presented by the first child. It is certainly, as compared with adults, an extremely difficult matter in children to make a satisfactory distinction in many cases between leukemia and pernicious anemia, as one occasionally meets with a condition in which the appearance of the case and the blood picture seem to be a mixture of these two conditions. The leukocytes in childhood are so likely to show very ready increase that marked leucocytoses are readily seen and cause confusion in diagnosis. I had an opportunity to examine the blood of this child and found the red cells, so far as I remember, about 3,200,000, the leucocytes 10,200. On a differential count there was seen a distinct lymphocytosis, the large lymphocytes numbering 16 per cent., the small lymphocytes 36 per cent. The polymorphonuclears were reduced; there were no myelocytes and no nucleated red cells. In the latter point this case differs from those shown at the last meeting, in which, it will be remembered, nucleated red cells were discovered. This case is therefore evidently neither leukemia or pernicious anemia. It seems to me that it is probably some form of infection, but an infection of obscure nature clinically, and perhaps such cases may be due to some variety of infection of which we actually know little as yet either clinically or pathologically. I do think, however, that syphilis should be carefully considered in this case, and splenic anemia given consideration.

Dr. L. J. Hammond.—It seems to me that sarcoma of the spleen should be considered in the case.

Dr. Griffith.—I have thought of sarcoma but there is marked enlargement of the liver as well as of the spleen, and because of this and the rarity of its occurrence in the two organs alone I think that such a diagnosis is extremely improbable.

Dr. Edsall said, in discussing the case of cyanosis: "I think that the case might be satisfactorily explained through accepting the existence of a patulous foramen ovale, particularly if Bard's suggestion concerning the cause of 'blue sickness' be adopted. Bard considers that cyanosis is not uncommonly due to the presence of a widely patulous foramen ovale which is covered by a membranous valve, this valve under ordinary circumstances keeping the opening pretty thoroughly closed. If, however, the pressure in the left auricle becomes abnormally high the membrane is forced open and the condition resulting is a completely patulous foramen ovale. This theory would explain the condition in this case very well.

The existence of a markedly accentuated second pulmonary sound points toward increased pulmonary lesion and this might readily be due to increased pressure in the left auricle resulting possibly from a slight degree of mitral stenosis which produced no murmur, a not uncommon condition. At any rate, the fact that the stenosis largely disappears when the child is quiet, and appears in intense degree after effort or other cause of increase in intracardiac pressure indicates that Bard's suggestion might be a proper one in this case."

Dr. ROBERTSON.—If Dr. Edsall's suggestion were true it seems to me that such a condition must be much more frequent, for a patulous foramen ovale is extremely common. In a series of over 200 autopsies I have found a patulous foramen ovale in about 40 per cent. of the cases. The size of the opening varied greatly, ranging from about the size of a pln head up to ¼ inch in diameter.

Dr. EDSALL.—I referred only to instances in which there was a very wide opening, and Bard's theory considers only such openings. Small openings in the foramen are of course extremely common but are of no clinical importance as they are either so situated that no admixture of blood occurs at all, or the admixture of venous and arterial blood is so slight as to produce practically no results.

Dr. JOHN H. JOPSON showed a case of **Head-Nodding Associated with Spasmodic Torticollis** in an infant 11 months old, without rachitic diatuesis. There was a history of a fall and of an attack of bronchitis immediately preceding the onset of the symptoms. The contraction of the right sterno-mastoid muscle, drawing the head toward the right shoulder, appeared before the head movements, which were of a pure nodding, or to and fro nature, and which ceased or diminished when the child's attention was riveted upon anything. There was nystagmus in both eyes, the movements being very fine and rapid; the child was otherwise exceptionally healthy and well developed. In the absence of marked rachitic symptoms, the preceding illness and the fall in a child of this age were the probable etiological factors in connection probably with a rather doubtful neurotic family tendency. The spasmodic torticollis probably depended on the same central irritation that caused the nodding spasm.

Dr. DAVID L. EDSALL reported a case of **Syphilis of the Liver** in a child of 14 years in which there were gummata of the liver which formed large masses. The case was probably one of hereditary syphilis with late manifestations. Mercurial inunctions and potassium iodide caused the tumors to disappear completely and ultimately the liver became of normal size and the child regained good health.

Dr. Thompson S. Westcott read a brief note on the **Differential Modification of the Proteids in Percentage Mixtures.** Such a combination would be made of cream, milk, whey and a diluent. The caseinogen percentage would be supplied by the cream and the milk, the whey proteid or lactalbumin percentage by all three, but in greatest amount by the whey alone. Attention was called to White and Ladd's suggestion that they be made from fat free milk, and also to their analysis of the proteids in whey which average about 1 per cent. With a fat-free whey containing 1 per cent. of whey proteids the calculation becomes very simple. The method will be published later.

Dr. Emery Marvel reported a case of **Suppurative Mastitis** in a female child 27 days old. The abscess formed within three days and involved an area about 3 inches in diameter, It was treated by free incision and antiseptic dressings with entire success. Mastitis is comparatively rare in infants and suppurative mastitis is very infrequently seen. The condition is produced by the retention of colostrum in the tubules with subsequent pyogenic infection. The most frequent exciting cause is trauma. The condition may have serious results and may readily be fatal. Jourda collected fifteen cases in which three deaths occurred and Bush describes a case in which all the tissues covering one side of the chest sloughed. Another possible danger, mentioned by Hirst, is rupture into the pleura and resulting empyema with probably fatal results. The condition therefore demands immediate and active treatment, which should be free incision, evacuation of the pus and antiseptic dressings.

The total number of students in the universities of Germany in the winter semester was 34,363, as against 34,389 last summer and 33,353 in the previous winter. The number of students of medicine shows a considerable decrease, being 7,113 as against 7,543 last winter.—*Atlanta Journal-Record.*

The Italian Government has tendered Dr. Eugene Wasdin of the United States Marine Hospital Service the Cross of Officer of the S. S. Maurizio et Lazzaro in recognition of his services in verifying and confirming the Italian studies and discoveries regarding the nature of yellow fever.—*Atlanta Journal-Record.*

ABSTRACTS

THE RELATIONS OF THE PURELY SCIENTIFIC STUDIES TO THE PHYSICIAN'S WORK.

In a paper published in the *Boston Med. and Surg. Jour.*, April 4, 1901, H. D. Arnold makes the following statement:

"The average practitioner is apt to rest satisfied if, by discovering a murmur, he is able to point out the site of the lesion and can give an anatomical name to the disease. Fortunately, for both patient and physician, the heart generally has wonderful recuperative powers, if given half a chance. Rest, with or without medication, and sometimes in spite of bad medication, furnishes the opportunity, and we take credit to ourselves for an improvement which was due to nature, and neither to our thorough understanding of the condition nor to an intelligent application of remedies."

This statement in relation to heart disease may, with certain modifications, be applied to diseases of other organs and should, we think, be forcibly and frequently brought to the attention of the medical student. Many a student is prone to think, as he sits on the benches during his first and second years of medical study, that the details of chemistry, anatomy, physiology and pathology which he is expected to master have really little to do with the work of his profession, and in this opinion he is often confirmed by the attitude of his acquaintances, who have completed the prescribed four years of study and have begun practice. So when the student reaches his third year and begins the study of the practice of medicine he is prone to give scant attention to the pathology and the differential diagnosis of the diseases as presented by his instructors; but so soon as a prescription is put on the blackboard he copies it with an energy that might better be expended in mastering the natural history of the disease in question. The savages beat upon drums, hoping by the din to scare away the evil spirit of the disease and thus renew the vitality and usefulness of the afflicted one. The civilized races go to a physician expecting to receive a drug or a series of drugs that will kill the same evil spirit of disease and render them immune, while they hold fast to their habits of unhygiene and of exposure. Drugs have not this magic charm, and those practitioners who have misapplied their energies during their college days, as well as the students who are now learning of the mysteries and the frailties of the human body, should bear constantly in mind that the normal and pathological anatomy and physiology which they are expected to understand will go farther toward fitting them to teach their patients the true secret of health than the mere knowledge that such and such a prescription is good for this or that disease. So, too, the mere ability to recognize and locate a cardiac murmur or a bronchial rale, to find tube casts, or to discover albumin or sugar in the urine, will avail little unless the fundamental principles of the cause, course and lesions of the disease producing these symptoms be thoroughly understood.—Editorial, *Philadelphia Med. Jour.*, April 20, 1901.

SCURVY IN INFANTS.

Louis Starr (*Philadelphia Med. Jour.*, April 27, 1901,) says that the direct causal factor of scurvy in infants is the continued use of food that lacks some essential nutritive elements or presents them in a form not readily assimilable. An analysis of the reported cases shows that the patients have received a great variety of foods, and if the few instances in which the only traceable cause is simple poverty in diet be eliminated, the sole factor that is uniformly present is the absence of the quality of *freshness*, the food is not "live." To put the whole question in a few words, the cause of scurvy in infants is the *continued deprivation of fresh food.*

The faulty foods may be classed in the order of their potency:

1. The different proprietary infant foods administered without the addition of cow's milk. These foods are responsible for the greatest number of cases, and which variety most readily induces the disease, depends chiefly upon the extent of the employment or the fashion at the time.

2. Proprietary foods employed with the addition of insufficient quantities of cow's milk.

3. Oatmeal or wheat gruel, barley and other farinaceæ administered with water alone or with water and insufficient cow's milk.

4. Condensed milk and water.

5. Sterilized milk. Properly modified milk mixtures subjected to a temperature of 212° F. from thirty minutes to an hour or more.

6. Too dilute milk and cream mixtures. Laboratory mixtures with too low albuminoid percentage.

Consideration of these groups furnishes an explanation of the greater frequency of scurvy in infants reared in luxury than in the very poor. The proprietary foods, being expensive, are little used by the latter class. the processes of modifying and sterilizing cow's milk are troublesome and require too much thought and time, and the cares of housework and and bread-winning prevent regular and accurate artificial feeding. In consequence the child of poverty is fed upon milk, either diluted or pure, as the chance may be, and if this be not at hand, upon tea, potatoes, bits of bread or other table food; a bad diet and one which often leads to rickets or dangerous gastrointestinal disorders, but which is too varied and "live" to produce scurvy.

The variations in the diet usually made at the end of the second year also explain the infrequency of the development of the disease after this age.

The essential cause of scurvy is unknown, but it is certain that it is some peculiar deprivation, and that the needed elements are present in fresh milk and the juice of fresh, ripe fruits.

He gives the result of an autopsy on the only case that died out of twenty-six cases treated:

The patient, a boy 15 months old, had been ill nearly four months before he was consulted, and was so far reduced in flesh and general strength, was so anemic and had such grave intestinal complications that all efforts at treatment were unsuccessful. After death the body showed extreme emaciation, the skin was inelastic, pale, and presented numerous ecchymotic spots of varying size; the gums about the eight incisor teeth that had been cut were deep purple in color, very swollen and spongy and covered with blood. Both legs were much swollen above the ankle joints, the right to the greater extent. On section, the lower third of the right tibia was found to be surrounded beneath the periosteum by a thick mass of dark, grumous blood, the lower epiphysis was detached, and the distal end of the shaft, macerated and eroded, lay free in the disintegrating blood-clot. The lower third of the left tibia was surrounded by a similar though less extensive subperiosteal blood effusion; it was not fractured. The fibulæ, femora and bones of the upper extremities were normal.

The intestines contained blood and blood-stained mucus and the mucous membrane was thickened and studded, especially in the colon, with follicular ulcers.

Microscopic examination of the bone and periosteum showed no lesion beyond the mechanical one at the seat of fracture, and the same was true of sections from the liver, spleen and kidneys, and of the blood.

"As the greater number of scurvy cases are quite typical the diagnosis is usually attended with little difficulty.

"The distinguishing features are the development in infants from six months to two years old, after the prolonged use of unsuitable food, of extreme hyperesthesia and immobility of the limbs; swelling of the thigh above the knee-joint and of the leg above the ankle joint; fusiform enlargement of the lower third of the shaft of the femur and tibia; deep purple discoloration (ecchymosis), swelling and sponginess of, and hemorrhage from the gums surrounding erupted teeth; general cachexia and anemia, and finally—the test feature—rapid disappearance of symptoms and complete recovery following the adoption of an antiscorbutic diet. and the negative symptom—non-involvement of the joints."

He enters thoroughly into the symptoms of this affection and publishes a complete analysis of his twenty-six cases. In regard to treatment he says:

"Briefly stated, the essential treatment is the employment of a food composed of cow's milk, cream, water and milk sugar, properly proportioned to the age of the infant and given, so far as the milk and cream are concerned, in the natural, fresh state, i.e. not passed through the separator and not sterilized.

"Pasteurization and predigestion at a temperature of 115° F. are admissible in certain cases, but should never be employed when the cream and milk are carefully handled at the dairy and can be kept clean and sweet, and when the infant's digestion is even moderately active.

"The juice of fresh ripe fruit, orange juice especially, is a useful addition to the diet, and when, as is usually the case, it can be taken without producing diarrhea, is an efficient aid to rapid recovery.

"For scurvy in an infant of eight months an appropriate food schedule is:

First meal, 7 a.m.

Cream	½ ounce
Milk	4½ ounces
Milk sugar	1 dram
Water	3 ounces

At 9 a.m.—One to two teaspoonsful of fresh orange juice, according to effect on the bowels.

Second meal 10.30 a.m., same as first.

At 11.30 a.m.—Two teaspoonsful of raw beef juice, free from fat, and with a little salt.

At 1 p.m.—One to two teaspoonsful of fresh orange juice.

Third meal, 2 p.m., same as first.

At 3 p.m.—Two teaspoonsful of raw beef juice with salt.

At 5 p,m.—One to two teaspoonsful of fresh orange juice.

Fourth meal, 6 p.m., same as first.

At 8 p.m.—Two teaspoonsful of raw beef juice with salt.

Fifth meal, 10 p.m., same as first.

"If orange juice cannot be obtained, or should it disagree, good substitutes are two to four tablespoonsful of scraped ripe apple (raw), two teaspoonsful of fresh grape juice, or six solid grapes from which the skins and seeds have been removed.

"In addition to the alteration of the diet very little treatment is necessary. Gentle inunction of the limbs with warm olive oil may contribute to the comfort of the patient, and some acceptable preparation of iron, as the ferrated elixir of cinchona, will assist in restoring the strength and building up the blood. If there be great prostration. strychnia and alcoholic stimulants should be administered, and all complications must be met as they arise."

TRACHEOTOMY.

In suitable cases, and they can hardly be mistaken, tracheotomy is such a humane and life-saving procedure that there should be no hesitation in adopting it, even if the only instrument at hand is a penknife. The operation itself is so simple that the narration of the following case must largely consist of the preceding and subsequent history.

C. M. D., 25 years of age, was admitted to Gouveneur Hospital August 18, 1896, suffering from severe laryngeal dyspnea. She could breathe only in a sitting position and by using all the accessory muscles of respiration. Laryngoscopic examination showed simply a general thickening of the interior of the whole larynx. There was an indistinct specific history, beginning in 1893, followed by hoarseness and aphonia. The present difficulty in breathing began in April and had gradually grown worse. Immediate tracheotomy was attempted under general ether anesthesia. As the recumbent position almost stopped respiration the anesthetic had to be given with the patient propped up by sandbags. This made the neck difficult of access, and with the first few whiffs of ether the larynx closed completely and struggling began. While she was forcibly restrained the knife was plunged into the median line, just below the lower edge of the thyroid eartilage, which was grasped by the fingers of the left hand. The wound was dilated by the finger, a canula inserted and the patient restored to consciousness by artificial respiration. Inspection then showed that the cricoid cartilage and first two rings of the trachea had been divided. In the haste of the operation a considerable amount of blood entered the trachea, but recovery was uneventful. There were no appreciable rise of temperature and no bronchitis or pneumonia, and on the fourth day the patient was out of bed.

The subsequent history illustrates the difficulties in treating chronic laryngeal stenosis, and also shows how roughly such a larynx can be handled. The condition did not improve, and in addition, a firm cicatrix developed just above the tracheal fistula. On November 15th, under chloroform, with the assistance of Dr. O'Dwyer, this was forcibly dilated with urethral sounds passed from below up and a large metal intubation tube inserted. It had to be vigorously pushed from above, while counter pressure was made on the outside of the larynx. This was worn with comfort for a week and then suddenly became clogged with mucus and was extracted just in time to prevent death from asphyxia. I have never since then dared to use a metal intubation tube.

In January another attempt at prolonged intubation was made with a hard-rubber instrument, but difficulty in swallowing, a complication much more common in adults than in children, forced abandonment of the treatment.

Two years later, or in February, 1899, the larynx was opened in the median line from the tracheal fistula to the hyoid bone. It was found almost completely obliterated by dense cicatricial tissue and its lumen could only be followed as one follows the urethra in cases of impermeable stricture. Some attempt was made to excise the cicatrices but the resulting space was only an open wound with more or less collapsible walls. An intubation tube was then inserted and kept from being coughed out by an attachment which could be screwed into the tube at a right angle through the fistula. This was carried in the larynx with comfort for three months and then removed as a cure seemed assured. But twelve hours later there was a fit of coughing followed by dyspnea, and the canula had to be replaced. Further treatment was refused until April, 1900, when, under chloroform, the larynx was again dilated with urethral sounds and the intubation tube reinserted. This time it was retained four months, but after removal there was a repetition of the previous experience.

I have not the least doubt that this woman could be cured by intubation continued uninterruptedly for about eight months or a year, and I intended to follow this course but the patient was nervous and excitable and addicted to beer, and the gastritis from which she constantly suffered seemed to be aggravated while she was wearing the tube and caused some eructation of gas, which she firmly believed would choke her. These eructations were her sole complaint and led her to insist upon the removal of the tube too soon. Some edema of the incompletely atrophied tissue seemed to follow, and she would then become frightehed and refuse treatment.

The noteworthy matters bearing upon the subject of the paper in this case are the following:

The attempt to administer ether for the original tracheotomy caused the already obstructed larynx to close tightly. The operation had therefore to be performed in haste and under difficulties and the opening was made too high or through the cricoid cartilage.

Two years later the laryngotomy showed that above the fistula the larynx was completely filled with cicatricial tissue. Its tortuous lumen was represented by a mere thread of mucous membrane. The condition was a great deal worse than at the time of the first operation, and it was undoubtedly largely the result of it, as it is well known that the nearer to the vocal cords a so-called tracheotomy is placed the worse is the subsequent cicatrix above it.

It is also worth remarking that, in spite of the roughest kind of handling in this case in rapid dilatation and intubation, there was never even a bronchitis.—Dr. John Rogers, Jr., *Med. Rec.*, April 27, 1901.

ANALGESIA IN CHILDREN BY SPINAL INJECTION, WITH A REPORT OF A NEW METHOD OF STERILIZATION OF THE INJECTION FLUID.

W. S. Bainbridge (*Med. Rec.*, Dec. 15, 1900) reports analgesia produced in seven children by spinal injection of cocaine or eucaine. The cases ranged from two and one-half to eleven years in age. The youngest patient was injected on three occasions. The amount of cocaine used varied from min. vii to min. xv of a 1 per cent. solution of cocaine and from min. vii to min. xxx of a 1 per cent. solution of eucaine. Some elevation of temperature, nausea, vomiting and some restlessness were the chief undesirable effects not produced.

These cases were specially selected. The preparation of each was the same as usual before a general anesthetic. The patient was placed in a sitting posture, well bent forward, and prevented from moving during the injection. After the skin over the site of puncture had been treated in the usual antiseptic way an ethylchloride spray was employed, rendering the introduction of the needle practically painless; no difficulty was experienced in introducing the needle. A point ½ inch to either side of the median line and midway between the spinous processes was taken, and the needle pushed forward, inward and upward. Special effort was made to keep away from the central part of the spinal canal by a close relation of the needle-point to the dura. The instrument used was of the simplest kind. A small-sized steel aspirating-needle with a short-beveled pointed end, having a well-fitted hypodermic barrel, answered every purpose. As nearly as possible the same amount of cerebrospinal fluid was allowed to escape as of the injection medium which was to be introduced. The injection was given slowly, usually taking one and one-half to two and one-half minutes. Often the first evidence that the cocaine was taking effect was some dilatation of the pupil or a slight nausea.

There have been many cases of failure reported which were attributable to the use of heat in the sterilization of the injection fluid. This fact led the author early to experiment with other means. About a dram of ether is poured over gr. v of powdered cocaine or eucaine in a measuring-glass, which has been boiled, as well as the glass rod used to mix the ether thoroughly with the powder. The mixing process continues until all the ether has disappeared: Then 1 ounce of boiled filtered water is added. The solution is made fresh before each operation.

After-effects.—In all cases any after-effects of an unpleasant nature were temporary. The urine on the day following the injection was examined in all cases for sugar and albumin. The result was uniformly negative. In only one case were there any serious symptoms following the operation. This was a high injection, with Pott's disease of the spine, in a patient in bad general condition.

Cocaine versus Eucaine.—His cases so far have proved more satisfactory when cocaine has been employed. The after-effects seemed no greater in one than in the other, and the analgesia was not so uniform or lasting when eucaine was employed.

A WORD FOR THE CIGARETTE.

"The writer is not and has not been a smoker. He smoked but one cigarette in his life, and that was when he was seven years old, and that one made him so deadly sick that he never after had any desire to court the fragrant weed. It I make bold enough to speak in favor of the cigarette, I cannot well be charged with partiality or partisanship. That smoking by minors or children is injurious I admit. That smoking is or may be injurious to adults suffering with any buccal, lingual, pharyngeal, laryngeal, tracheal, bronchial or pulmonary troubles, I admit. But that cigarette smoking is capable of doing the damage ascribed to it by some sensational newspapers is extremely questionable, and that cigarettes are in any way more injurious than cigars is positively false. That smoked to excess both cigarettes and cigars may cause serious injury, is probably true. But no article or method should ever be condemned for its abuse or misuse. Tobacco is a sedative and all sedatives are dangerous when used to excess, but when used occasionally and in moderation cigarette smoking may prove distinctly beneficial. The writer has seen more than one case in which a cigarette allayed nervousness and irritability and produced a distinctly soothing effect, especially so in women of a delicate, nervous constitution. In one case I prescribed it as a remedial measure and it gave better results than the bromides or valerian. I hope I shall not be misinterpreted as advocating that American women should follow in the footsteps of European aristocracy and take up cigarette smoking, but I do say that if the poor cigarette is to be condemned and ostracised it should be on scientific grounds after a thorough and sober consideration of all the facts and evidence. To call smoking immoral and condemn it on that ground—well, it shows that some people have a very, very queer notion of what is moral and immoral.—Dr. Wm. J. Robinson. *Philadelphia Med. Jour.*, April 27, 1901.

PEDIATRICS

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Vol. XII. SEPTEMBER 1st, 1901. No. 5

ORIGINAL ARTICLES

THE TREATMENT OF POTT'S DISEASE IN CHILDHOOD BY CONTINUOUS OVER-EXTENSION OF THE SPINE.*

By Royal Whitman, M.D.,
New York.

IT may be claimed for the operation of forcible correction of the deformity of Pott's disease that although it is likely to fall into practical disuse, it has effected a distinct advance in the knowledge of, and consequently in the treatment of, this affection. For example, it has now been established by clinical experience and by pathological investigation that the capacity for formation of new bone in this region is quite inadequate to replace the loss of even one vertebral body, consequently there can be no remedy for that part of the deformity directly dependent upon loss of tissue.

On the other hand, it has been demonstrated that the distorted spine may be straightened with comparative ease, not only by force but even by much milder methods that do not entail danger to the patient.

Thus, the importance of checking the destructive process has been emphasized, and the routine of treatment is likely to be more or less modified in the future to meet this requirement.

To one such modification in the direction of more direct and positive treatment I shall briefly call your attention.

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* Read before the American Orthopedic Association at Niagara Falls, June 12, 1901.

It may be assumed that when the local disease has advanced to the destructive stage there is actual contact of the eroded segments above and below it. This is indicated by the persistence of local deformity under mechanical treatment and by its inevitable recurrence after forcible correction, however much the secondary distortions may be modified. And although such contact may be essential to final consolidation and repair, yet during the destructive stage it is attended by pressure and friction. This was impressed upon me when in evacuating an abscess in the posterior mediastinum, complicating Pott's disease of the thoracic region, I was able to insert my finger between the apposed vertebral bodies. Here, although the patient was recumbent, it was forcibly compressed at each respiration, the trunk moving backward and forward upon the articular processes as on a hinge.

Pressure and friction are the most important of the factors that contribute directly and indirectly to the advance of the destructive process and to consequent deformity. The direct influence varies with the situation and the quality of the disease, but it is probably present to some degree whenever the softened vertebral bodies are in contact; and it is exaggerated doubtless when superincumbent weight is combined with the actions and postures peculiar to the erect attitude, however much it may be lessened by mechanical support.

It is evident then that actual separation of the mutually diseased surfaces offers the best opportunity for repair by removing the exciting causes of the progressive destruction, and thus lessening the danger of widespread infection of the neighboring tissues. If this is only possible in the recumbent posture it follows that recumbency is an essential part of the most effective mechanical treatment. The treatment of a chronic disease of this character is often somewhat of a compromise, a more efficient method being displaced for one that offers reasonable palliation, either because it is less difficult or for other reasons of more or less importance. In order to avoid this issue I shall limit myself to a consideration of Pott's disease in children less than three years of age, a class in which recumbency should be for a time the treatment of selection and routine.

The apparatus that I employ to assure horizontal fixation, or what may be termed ambulatory recumbency, as distinct from confinement to the bed; with which it is often confused, is a modified stretcher or Bradford frame. This apparatus, as it is ordinarily constructed and as it is described by Bradford and others, is a rectangular frame of gaspipe somewhat longer and somewhat wider than the patient, which is covered except for an interval in the center about 6 inches in width wlth cotton sheeting drawn as tight as possible.

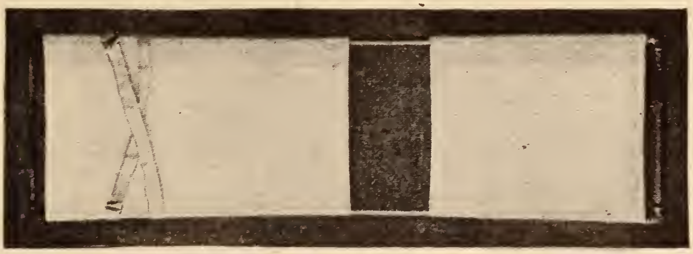

Fig. 1. The Bradford Frame.——From Bradford and Lovett.

The efficiency of this admirable appliance may be increased by changing it in several particulars; for example, in width, in shape and in covering. The width of the original frame, in proportion of about 1 to 3½ of length, is such that a certain amount of sagging of the cover is unavoidable, and in practice I have found it feasible to reduce it very materially; to make width as to length 1 to 5 or slightly less, so that the support is somewhat narrower than the body of the patient. At first thought it would seem that the side bars would cause uncomfortable pressure on the overhanging shoulders, but as the arms are set upon the middle of the lateral aspect of the trunk and thus on a considerably higher plane than the dorsum, there is but bare contact when the cover is fairly rigid.

The second and most important modification and one that I have employed for several years is to so bend the frame as to gradually force the spine into over-extension, the aim being first to overcome deformity and finally to obliterate all the curves of the spine, normal or otherwise, by bending the body backward. In this attitude it may be assumed that the vertebral bodies are separated from one another to an extent that is practicable, and that direct pressure is entirely removed from the seat of disease.

The Bradford frame, the Phelps bed, the wire cuirasse and other portable appliances of this character were designed simply to support the trunk in the horizontal position,

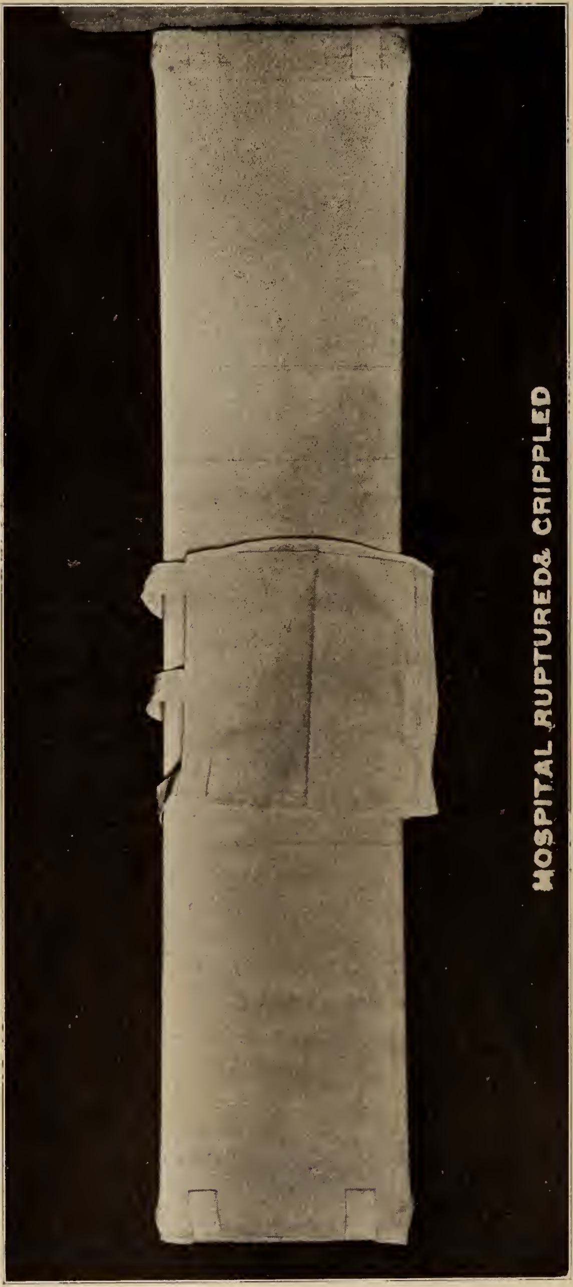

Fig. 2. The Modified Frame.

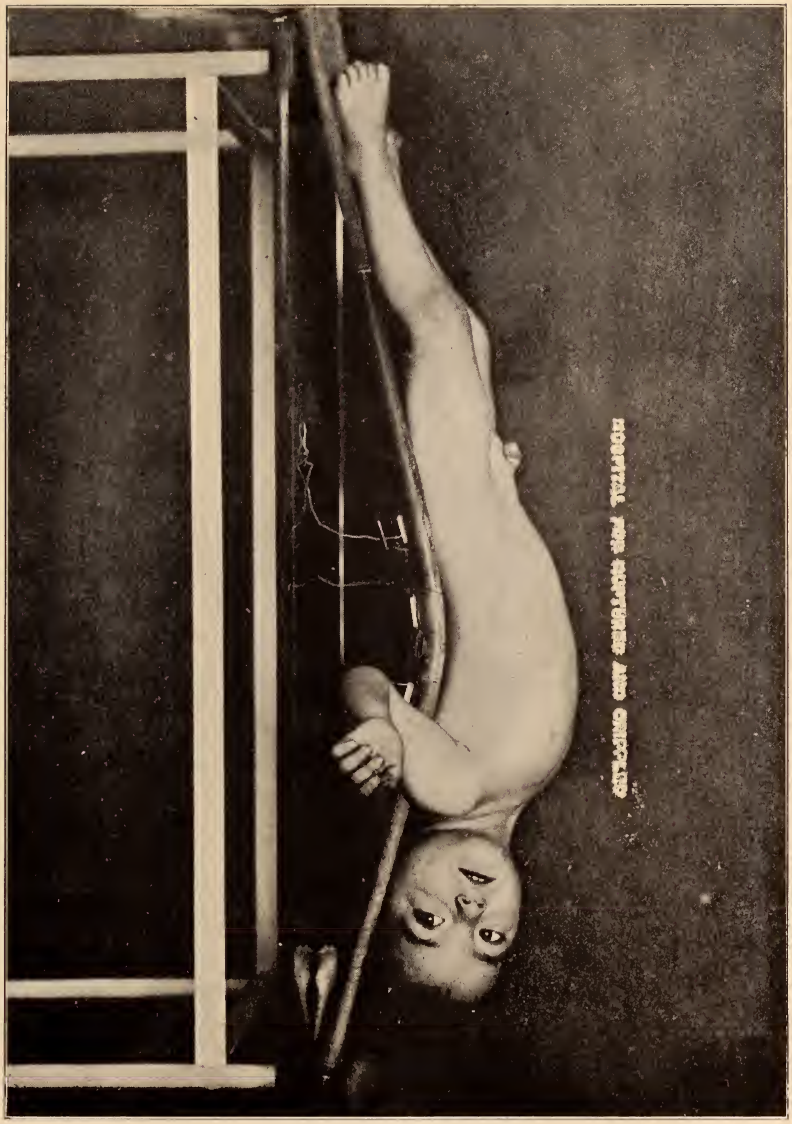

Fig. 3. The Modified Frame, illustrating over-extension of the spine and gravity traction.

recently the advantage of appropriate padding to hold the spine in the extended or over-extended position has been recognized, it has been applied rather to assure better fixation at the diseased area and to preserve the physiological curves in the lumbar and cervical regions than, by over-extension of the entire spine, to obliterate them. It may be stated also that padding is in practice a very unsatisfactory support, and particularly so in the treatment of patients who are seen at infrequent intervals.

I may mention in this connection that in 1895 Selva (Trans. Am. Orth. Assn., vol. viii, p. 225) suggested bending the frame so that the trunk might be supported on a higher horizontal plane than the head and buttocks. This bending was made before the apparatus was applied, its object being rather to assure better support and fixation from the beginning of treatment than to progressively change the entire contour of the spine in the manner that has been described. The difficulty in adjusting this appliance explains doubtless the neglect of a valuable suggestion.

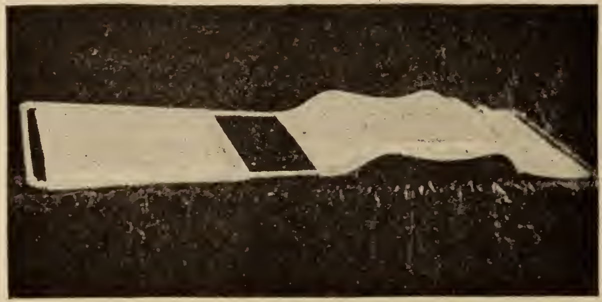

Fig. 4. Selva's modification of the Bradford Frame—From Bradford and Lovett.

The third modification is to make the cover of strong canvas in one piece. This assures more effective support than when it is divided into two parts, and for children of this age who wear diapers it is equally cleanly and convenient.

The construction, application and further use of the appliance may be described to illustrate the changes, and for the benefit of those who may be unfamiliar with this form of treatment.

The stretcher frame is made of ordinary galvanized gas pipe or of steel tubing of a smaller diameter. It should be about 4 inches longer than the child and about four-fifths as wide, the lateral bars corresponding to the articulating surfaces of the four extremities with the trunk. The ordinary dimensions are 7½ by 38 inches, or as has been stated, width to length about as 1 to 5. Before the cover is applied one may with advantage wind bandages tightly about the frame at the point which is to support the body in order to assure as much rigidity as possible. The cover should be of strong canvas suitably protected in the center by rubber cloth. This is ap-

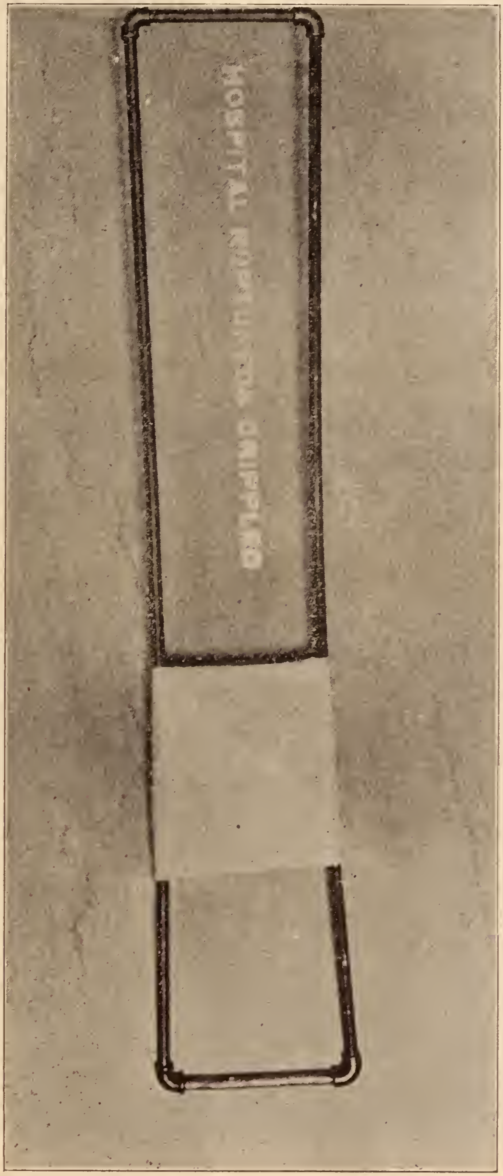

Fig. 5. The Modified Frame, illustrating the application of the bandage.

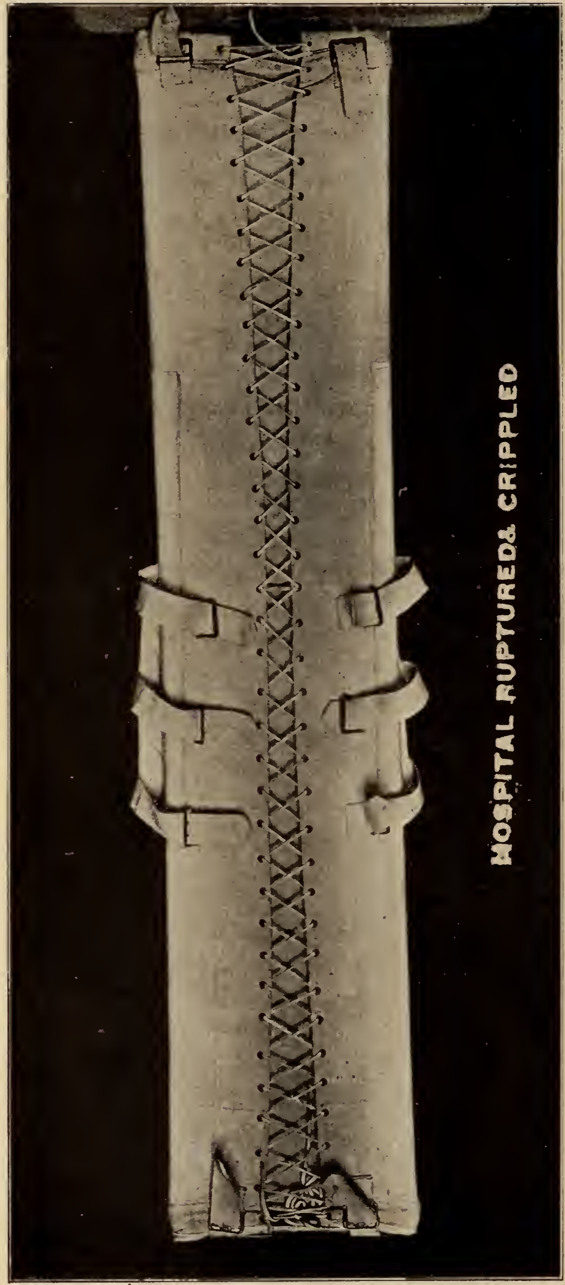

Fig. 6. The Modified Frame, illustrating the adjustment of the cover.

plied and is made as unyielding as possible by means of the corset lacings and straps. Upon this two thick pads of felt are sewed; these should be about 7 inches in length and about ¾ inch in thickness, so placed as to pass on either side of the spinous processes at the seat of disease, thus protecting them

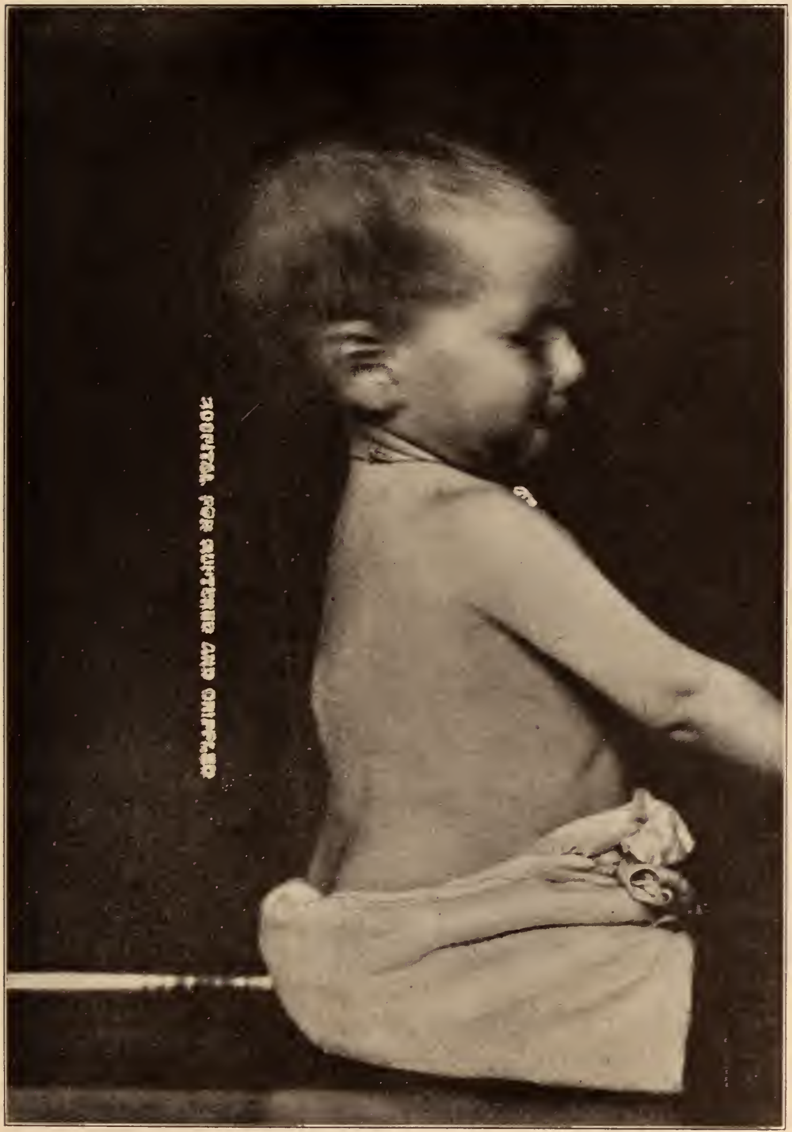

Fig. 7. Characteristic deformity of Pott's disease at an early stage.—See fig. 8.

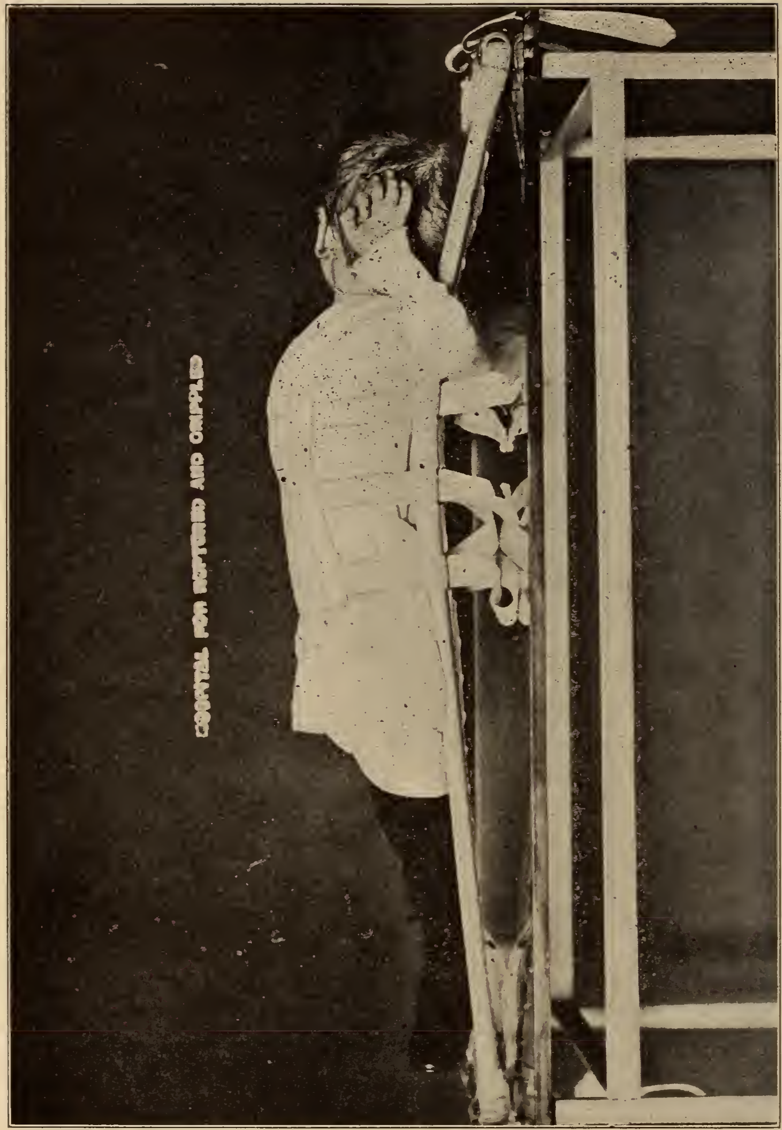

Fig. 8. The routine method of Fixation, same patient as in Fig. 7

from pressure, fixing the part more firmly and increasing the leverage of the apparatus. The child, wearing only an undershirt, stockings and diaper, is placed upon the frame and is fixed there usually by a front piece or apron similar to that used with the spinal brace. In certain instances it may be advisable to fix the shoulders more firmly by an anterior brace, to apply traction to the head or legs, to restrain the movements of the limbs or to assure greater local fixation of the trunk by the application of a brace or plaster jacket. In the routine practice, however, these modifications are not required if the apparatus is properly adjusted. As soon as the patient has become accustomed to the restraint, one begins to over-extend the spine by bending the bars from time to time upward beneath the kyphosis with the aim, as has been stated, of actually separating the diseased vertebral bodies and obliterating all the physiological curves of the spine so that the body shall be finally bent backward to form the segment of a circle. The greatest convexity is at the seat of disease, and as the head and lower extremities are on a much lower level, an element of gravity traction is present in some instances, while the support of the spine as a whole is much more comprehensive than when the body lies upon a plane surface. The gradual over-extension of the spine by bending the frame in this manner is so definite and simple that it may be easily carried out by the physician, and it may be exaggerated slightly to compensate for the sagging of the cover. Thus, it is far more effective than any form of padding or other form of support with which I am familiar. Upon this frame the child lies constantly, its clothing being made sufficiently large to include the apparatus, thus assuring additional fixation. Once a day in most instances the child is removed from the frame and is carefully turned face downward upon a large pillow; the back is then inspected and powdered, the frame arranged and the apparatus is then reapplied. It is, of course, desirable to have two equipped frames, but this is by no means essential.

The effect of this continued fixation upon the back is not merely to change the contour of the spine but of the entire trunk as well; to flatten and broaden the body. This increase of the lateral at the expense of the antero-posterior diameter, is quite the reverse of the natural tendency of the deformity, and it is therefore a favorable rather than an unfavorable effect of treatment. The same tendency in the lower region may be checked by the use of a flannel binder such as is ordinarily worn by infants. As this frame is simply an horizontal brace the child may spend as much time in the open air as would be practicable were any other appliance used.

Meanwhile it may be assumed that the spine in its development is uninfluenced by the deformity, whereas under the most effective bracing in the upright posture it is influenced very decidedly by the local disease and distortion.

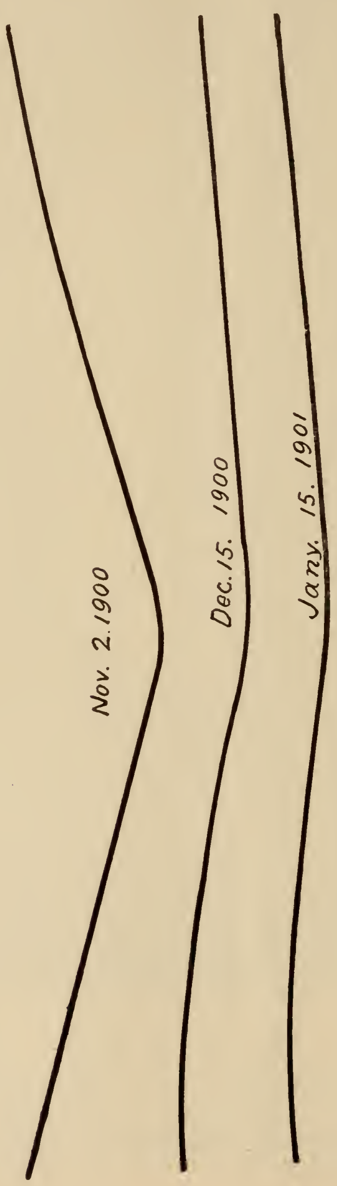

Fig. 3. Tracings of the Spine, showing recession of the deformity under treatment. The patient is shown in Figure 3.

Personally I have never seen other than favorable results from this method of treatment, Pain and discomfort are, as a rule, relieved almost immediately, and there is a corresponding improvement in the general condition of the patient. Meanwhile the growth of the trunk, which is so often checked by the disease and by the deformity, appears to progress with normal rapidity, so that the apparatus may be actually outgrown before the termination of this part of the treatment. I am therefore rather inclined to regard the supposed benefit of exercise in cases of this character and at this age, as one of the several delusions that have retarded the progress of positive treatment. Horizontal fixation is, of course, a treatment not complete in itself since it must be supplemented by the usual supports when the erect attitude is again assumed. Its duration varies from six to eighteen months. The indications for its discontinuance are the correction of deformity, the apparent quiescence or cure of the local disease as indicated by the physical signs and by the behavior of the patient, who as repair advances becomes restless when removed from the frame, evidently desiring to sit and to stand.

At this stage it is well to apply the ambulatory support some time before the patient is released from the frame, allowing little by little the changes in attitude and habits. If the plaster jacket is to be used it may be applied during longitudinal suspension or otherwise, after which the child is immediately replaced upon the frame where the plaster is allowed to harden, thus it holds the spine in an attitude to which it has become accustomed. Such direct support is also of service during the active stage of the disease when the symptoms or physical signs indicate the desirability of more efficient fixation.

It is interesting to note the perfection of the cure in certain of the early cases treated by this method, so perfect that one would be inclined to doubt the diagnosis were it not for the unmistakable character of the symptoms. In one such case I was fortunate enough to have the confirmatory evidence of the Roentgen picture which illustrates this article.

In conclusion I may say that the object of this paper is to advance the proposition that horizontal fixation should be the treatment of routine during the destructive stage of Pott's disease in early childhood. This proposition, although by no means novel, is not one that is generally taught or generally accepted.

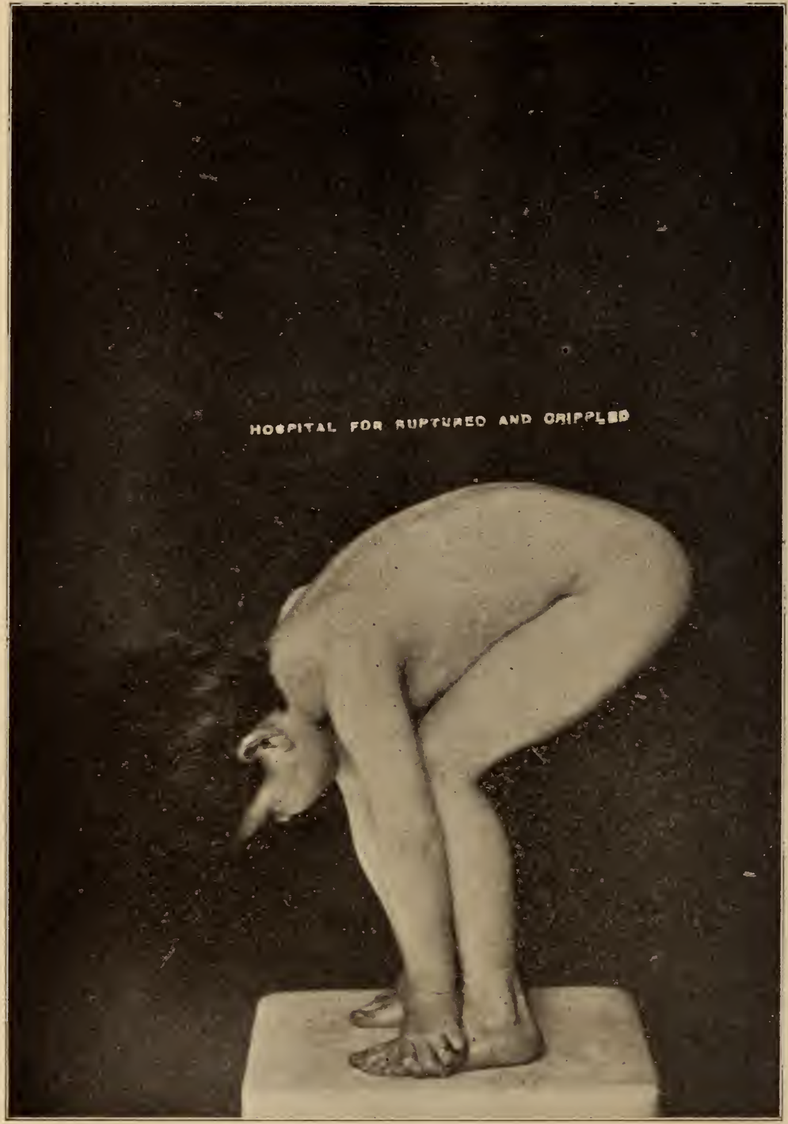

Fig. 9. A final result of treatment. No trace of disease remains. See Figs. 10 and 11.

Pott's disease is the most common and the most important of all the forms of tuberculous disease of bone. If it were recognized even when the diagnosis is made evident by local deformity and treated in the manner suggested, a treatment so simple and so definite in its details that it is quite at the command of the general practitioner, the disastrous deformities now so common in this class of cases would be prevented.

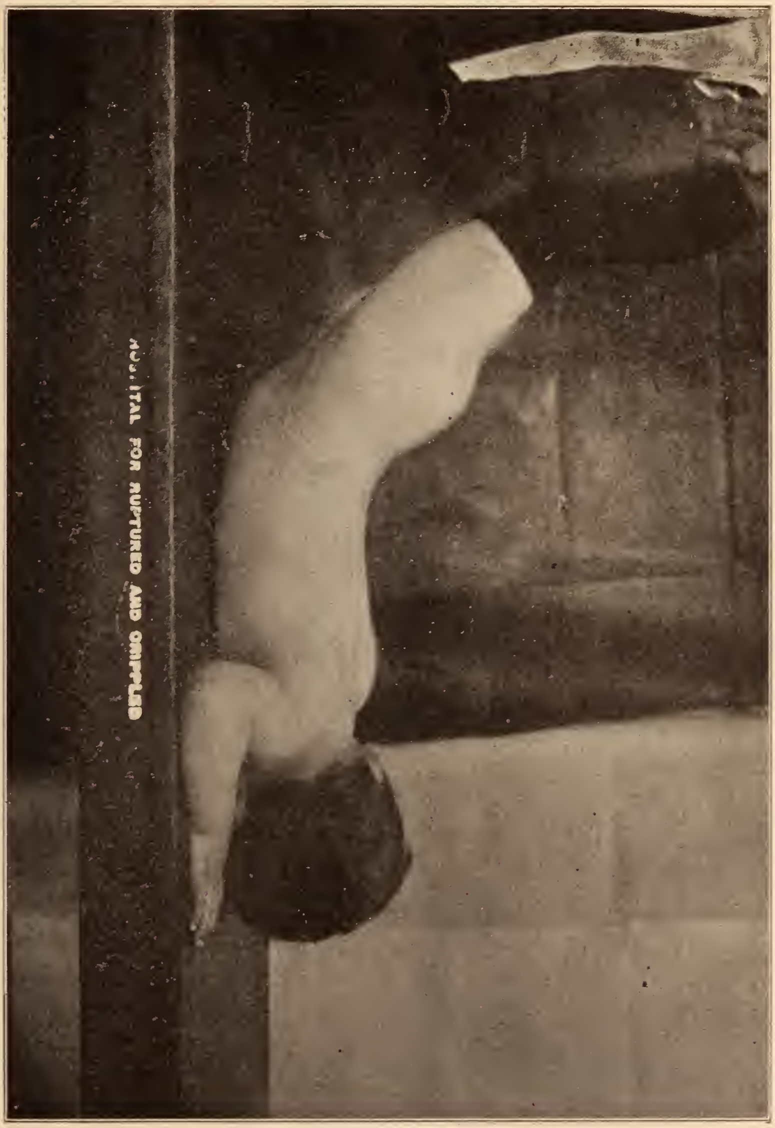

Fig. 10. Illustrating the flexibility of the spine. See Figs. 9 and 11.

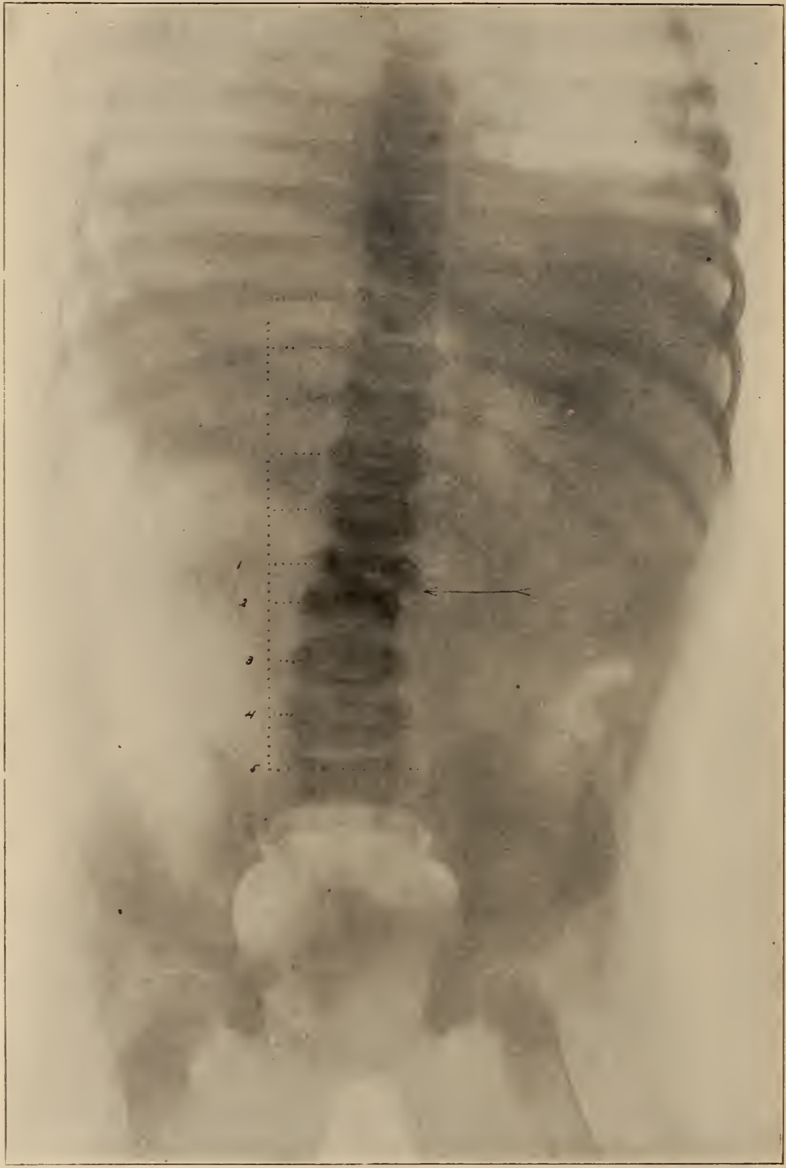

Fig. 11. A Roentgen Picture, illustrating disease at the junction of the first and second lumbar vertebrae. The destruction of tissue is indicated by the spaced lines, also the lateral distortion of the spine. See figures 9 and 10.

THREE CASES TREATED WITH ANTISTREPTOCOCCUS SERUM.

By M. Girsdansky, M.D.,
New York.

CASE I.

ESTHER S., 8 years of age, is of slight, delicate build. Patient has been under my treatment for recurrent attacks of chorea during the last two years. She would improve under arsenic, bromides and proper hygiene, and would remain well until a new cold, excitement or a prohibited meal would start a new attack. She was also subject to severe attacks of tonsillitis, which would occur either simultaneously with the chorea or otherwise. With such attacks she would be laid up for a week at a time and would recover under the ordinary treatment.

For the present illness I was called to see her on April 19, and found her suffering from an unusually severe attack of tonsillitis, with a temperature of 105° F., pulse 150, slightly irregular, patient frequently becoming semiconscious; tonsils enlarged and covered with white patches. I prescribed calomel for her in broken doses and the classic iron mixture with ice to the head and frequent sponge baths. On the next day the patient was worse if anything. She lay in an apathetic condition from which she would be roused unwillingly—temperature 104° F.; pulse 150, occasionally irregular. As there were cases of scarlet fever in the house I advised the parents, who happen to be intelligent people, to have the child injected with antistreptococcus serum, to which they gave their consent.

In the evening I injected about 8 c.c. of antistreptococcus serum (Parke, Davis & Co.) ordering them to continue the treatment as before. In the morning the temperature fell to 102° F. and in two days the child felt well; temperature 100° F. and the parents were unable to keep the child in bed. In none of her former attacks, although they were very much milder than the last one, has she made such rapid recovery.

CASE 2.

Mollie J., 11 years of age, a girl of unusually well developed physique, has always been well except for an attack of measles which she went through about two years ago. I was called to see her on April 18th, and upon examination found her skin, face, body and extremities covered with a very abundant scarlatinal rash; her tonsils were enlarged, cervical glands swollen and nasal breathing difficult; temperature (rectal) 105° F., pulse 150, regular, bounding. I prescribed calomel in small, frequent doses, the usual iron mixture; ice to the head, sponging of the body with alcohol and tepid water, and milk diet.

Next day her tonsils and posterior pharyngeal wall were covered with an abundant white exudate; cervical glands much more enlarged; nasal breathing very difficult in spite of frequent nasal douches with both normal salt solution and a diluted solution of peroxide of hydrogen.

On the 20th, in the evening, as the symptoms had not abated in the least I gave her about 8 c.c. of antistreptococcus serum hypodermatically. There was no difference in her condition on the next day, but when I visited her Monday morning, (about thirty-six hours after the injection,) the patient claimed that she was not sick at all. Her temperature was 102° F., pulse 120; the throat exudate was much thinner and smaller in extent; nasal breathing free, so that I had the nasal irrigation discontinued; four days later her temperature was 100° F., where it remained for about a week. The skin began to come off in large flakes and the shedding was not complete until five weeks from the first day of the illness; no complications occurred. The child is well now.

CASE 3.

G—i, a boy of 5 years of age, about three years ago suffered from an attack of what seems to have been cerebrospinal meningitis; is weakly, nervous; subject to frequent attacks of tonsillitis and occasionally suffers from night terrors. On the 11th of April I was called to see the child and found him suffering from a severe attack of scarlet fever; temperature 105° F., pulse 150, irregular in force and frequency; tonsils enlarged and covered with white patches; cervical glands swollen to such an extent that the contour of the lower jaw was lost around to the angle of the inferior maxillary bone; breathing through the nose only occasional. I ordered frequent small doses of calomel, the usual iron mixture, syringing of the nose with a peroxide of hydrogen solution, ice to the head, frequent alcohol and tepid water spongings and milk diet. During the evening the boy became delirious. Next day his pulse was very rapid, irregular; his delirium did not abate; temperature 105° F.; cervical glands very much swollen and tender; delirium almost constant; white exudation covering tonsils and nasopharynx; nasal breathing almost impossible.

On the 13th as the condition showed no amelioration I injected in patient about 7 c.c. of antistreptococcus serum and ordered to continue the other treatment as above.

The parents noticed no change in the child's condition during the day, but on the next morning his temperature was only 103° F.; delirium ceased, and the quality of his pulse improved.

On the 15th his temperature was 101° F., nasal breathing, patches in throat thinner and smaller, cervical glands swollen on one side, in spite of which the child felt playful and expressed a desire to leave the bed; sleep long and undisturbed. Two days later the patches almost completely disappeared, nasal breathing became perfectly free, and the boy felt almost well save for a developing left cervical abscess which was lanced subsequently and healed kindly. Dr. E. Finkelstein, who saw this case in the capacity of Inspector for the Health Department, told me that also in his judgment this was a very serious case. I learned, moreover, that when the child was at its worst the mother during my absence called in another physician who refused to prescribe for the child, for the sole reason that he thought it was too late to do anything, as the child was dying.

No complications beyond the above mentioned abscess occurred, and the child went on to a complete uneventful recovery.

Out of a dozen cases treated by me with antistreptococcus serum, I report these three for the following reasons:

Case 1.—I had ample opportunity to study this case previous to the described attack and I could not to my own satisfaction ascribe the sudden improvement in the child's condition to mere coincidence.

Case 3 has a rather bad history and stood the fever badly. The general aspect of the patient was similar to those that ordinarily swell the mortality statistics of scarlatina. Two other physicians who saw the case, each separately and uninfluenced by one another's opinion, came pretty nearly to the same conclusion.

However, even such cases may recover under ordinary treatment, but the sudden fall of temperature and the abating of the other symptoms in about thirty-six hours after the injection of the antistreptococcic serum would need a very unnatural overstraining of logical argument to be skeptically explained away by mere accident.

Case 2 although of a better personal history, still presented a very severe case of scarlatina, although the progress from the start was much more favorable than it was in case 3. Still the rapid abatement of the symptoms after the injection was phenomenal and *the* particular feature in all the cases where I have used the serum; and it is this feature of the treatment which would suggest to the unbiased mind the idea of specificity that, I hold, justifies me in reporting the above cases.

239 East Broadway.

CARBOLIC ACID.

Pirkner reports a case of a child who swallowed a tablespoonful of pure carbolic acid. He was called in about half an hour after the dose was taken and administered absolute alcohol, which apparently relieved the child, but was too late to cure it entirely. He thinks, however, that this case alone is sufficient evidence of the antidotal effect of alcohol on the amount of carbolic acid that remained in the child's stomach when it was given. He suggests that there may be a possible danger in the use of alcohol when a certain amount of carbolic acid has been absorbed, and he would advise under similar conditions not to repeat the dose of alcohol if it cannot exert its specific effect because of the large amount of chemically unchanged carbolic acid in the circulation.—*Jour. A.M.A.*

OSTEOMYELITIS IN A BOY OF NINE YEARS.*

By J. Garland Sherrill, A.M., M.D.,

Professor of Theory and Practice of Surgery and Clinical Surgery in the
Kentucky University, Medical Department,
Louisville, Ky.

THIS boy is 9 years of age. Some time in January 1900 he was brought to me with the history that three months before while playing with other children at school he fell against a tree receiving a slight blow. He did not complain much for a while, but about ten days after the injury swelling developed in the shoulder, with some lameness, pain and rigidity of the muscles.

He received treatment at the hands of the family physician for a time, and later an abscess developed which was opened.

When I saw him there was a sinus discharging pus from an opening about 1½ inches below the shoulder joint, on the anterior and inner aspect of the arm. There was considerable swelling about the shoulder, the joint was globular and rounded, so much so that I thought the disease had extended into the joint, probably being first osteal and later involving the joint; but examination revealed nothing except the presence of dead bone.

I decided to do an atypical resection of the humerus subperiosteally; this I did, taking out almost all of the head of the bone, leaving but a little shell up near the joint. I found after making an incision that the disease did not involve the joint, but only the humerus itself.

At the time of the operation I questioned very much whether it would not have been wiser to make a drainage-opening in the periosteum for draining the lower portion of the shaft, as there was an osteomyelitis leading down to the lower extremity of the bone and considerable thickening down even to the elbow. But I did not do this, merely scraping it out well, packing and draining. This sinus persisted for quite a long time, healing once or twice then breaking down again; finally healing took place permanently about a year after the operation.

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* Abstracted from proceedings of the Louisville Surgical Society.

An incision was made in front, as you will observe, almost over the bicipital groove. The bone was removed to within about 3 inches of the elbow joint. The bone itself at that time was apparently as thick as the entire arm is at present. This redundancy has been absorbed and we have now about the normal size of the shaft, Both in the upper and lower segments there has been considerable reproduction of bone which can be plainly demonstrated by examination; there is one piece of slightly rounded bone leading down from the upper segment and one leading up from the lower segment. Of course, the shaft of the bone is considerably shortened and there has been no union between these pieces of new bone. From the tip of the acromion to the external condyle on the sound side is just 10 inches; on the injured side the distance is only 8 inches, showing that there is 2 inches shortening.

The question of importance now is whether or not anything can be gained by further operative steps in this case, whether I can get bony union between these two fragments by suture. The boy has fairly good use of his arm; he can bend it and bring it to his head. When I saw him he was only in fair health, beginning to show the ravages of the disease. He had a slight cough but has never had any pulmonary involvement. Soon after the operation he began to gain in flesh and as you see is now quite a robust boy.

According to the *New York Medical Journal*, the health department of Watertown, N. Y. has placed on exhibition a man suffering from smallpox, the health department taking that remarkable method to convince skeptical physicians and others that the cases of smallpox in town are actually that disease. The man afflicted was placed on a couch before a large window at his home, which faces directly upon the sidewalk.—*Atlanta Journal-Record.*

EDITORIAL COMMENTS

Empyema of the Antrum of Highmore in Young Infants

In the *Medical Record*, August 10, 1901, Dr. Emil Mayer reports a case of empyema of the antrum of Highmore in an infant of two and a half years. Although some have held that cases similar to that reported are not true cases of empyema, but rather cases of caries, osteomyelitis, periostitis etc., the author takes issue with them. He quotes Lenox Browne who maintains that the maxillary sinus appears during the fourth fetal month; the ethmoidal at the seventh fetal month; the sphenoidal at the third year of life; the frontal at the seventh year of life; that the maxillary antrum is well defined although small at birth and undergoes little change until the second dentition, from which date it develops rapidly. A review of the literature shows that it is affected quite often in acute infectious diseases of childhood. Streptococci, staphylococci, Klebs-Loeffler bacilli and pneumococci are among the organisms that have been found there *post mortem*. The author thinks it possible that infection of the antrum may explain the persistence of the bacillus of diphtheria in the nose in some cases. Among other causes are mentioned dental affections, coryza, acute and chronic rhinitis, tonsillitis, pharyngitis and foreign bodies. According to Mayer there may be a secondary infection in typhoid fever, acute rheumatism, suppurative processes in other parts of the body, typhus fever, pneumonia and varicella. That empyema of the antrum does occur in young infants the author considers as established beyond question. "That so few cases are noted in the living is probably due to the fact that the mortality is greatest when this complication occurs, and also that in the very young the presence of localized pain is difficult to establish. In all reported cases the symptoms are the same, namely, fistula under the eye usually discharging pus, ectropion, one-sided purulent discharge from the nose with foul odor, and eroded bone." T.

Reverberations of the Tuberculosis Congress

Now that most of the editors of the leading journals have had their say in regard to Koch's views concerning the non-transmissibility of bovine tuberculosis to man, it is interesting to note with what unanimity they have expressed themselves. Pretty much all seem to agree that the distinguished professor was scarcely justified in stating his opinion so emphatically. Many regret that a matter which, at present at least, should be of purely scientific interest should have been given such extensive notice in the public press. They seem to fear lest views so radically at variance with the accepted doctrine on this subject may lead the unscrupulous dairyman and butcher, pleading the weight of authority, to neglect those precautions that have been so strictly insisted upon by health authorities hitherto. Most point out that Koch's views are not nearly so original as certain lay journals have lead the public to believe. A few do not hesitate to say that they regard this distinguished scientist as somewhat of a *poseur* just at present and consequently, perhaps, liable to utter what is more likely to be sensational than true or original. They instance certain premature claims in regard to tuberculin; also thunder borrowed from the distinguished English and Italian investigators concerning the propagation of malaria by mosquitoes. The majority seem to be rather of the opinion of the Congress, which, at its close, among other things, passed the following resolution. "That in the opinion of this Congress medical officers of health must use all the powers at their disposal and relax no effort to prevent the spread of tuberculosis by milk or meat." T.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting March 14, 1901.

W. L. Stowell, M.D., Chairman.

An Interesting Case of Congenital Heart Affection.—Dr. A. Bassler presented a little child for examination. The opinion of those present seemed to be that it was a case of congenital pulmonary stenosis with characteristically loud murmur at the second interspace on the left side.

Dr. H. Heiman presented a boy of 6 years who, the mother said, became cyanosed on slight exertion. A murmur could be heard all over the abdomen and thorax; the precordial dullness extended over far to the right. The physical signs seemed to indicate that there was a pulmonary stenosis with a defect in the ventricular septum.

Pathology of Typhoid Fever.—Dr. Martha Wollstein read this paper.

The Value of the Widal Reaction.—Dr. John Lovett Morse, of Boston, read this paper. He said that a bouillon culture of the typhoid bacillus grown at room temperature for from twenty-four to thirty-six hours was the most satisfactory. The tendency abroad seemed to be to use a high dilution and short duration, whereas, in this country, the preference seemed to be for a low dilution and a longer time limit. In 253 cases observed at the Boston City Hospital last fall with a clinical diagnosis of typhoid fever, the reaction was certainly only absent in 10 cases, thus giving 4 per cent. of failures. Of these 10 cases one had died from hemorrhage from the bowel, and in another the autopsy had shown the typical lesions of typhoid fever. The dilution employed in these examinations was 1 in 10, and the time limit half an hour. The reaction might be obtainable a number of years after an attack of typhoid fever. One was justified in stating that the Widal reaction is present in at least 95 per cent. of all cases, but it seldom appears before the second week of fever and may be delayed until convalescence. In a smaller number of cases it may be absent altogether. Typhoid fever could not be excluded by a single or even by repeated negative tests, though the latter were very strong evidence against typhoid fever. A positive reaction was definite proof of typhoid fever unless the person had had a previous attack of typhoid fever. A negative reaction followed by a positive reaction with a dilution of 1 in 50 was as certain evidence as anything obtainable in medicine. In a series of 164 cases of typhoid fever in children a positive Widal reaction had been obtained in 77 cases, the children being between the ages of two and thirteen years. It seemed as if the reaction was usually obtained somewhat earlier in children than in adults. The reaction appeared to be weaker in young children than in older ones, and the agglutinating power was lost more quickly. The serum test was of special value in the diagnosis of typhoid fever in children, in ruling out other gastrointestinal diseases and in making the diagnosis possible in many mild cases which might otherwise pass unrecognized. The Widal reaction in early infancy was not quite as important as in the adult because of the possibility of there having been a fetal typhoid. There was abundant evidence that the agglutinating power might be transmitted to the infant through the mother's milk, and there was reason to believe that it might be transmitted for a number of years. When conveyed through the milk the reaction soon disappears from the infant's blood.

Dr. W. P. Northrup reported a case in which the diagnosis of typhoid fever in an infant of 9 months had been attempted by the Widal reaction. At the time of admission of the child to the hospital the father and two brothers were already in the hospital suffering from typhoid. The child's temperature was 103° F., the abdomen was markedly tympanitic and the spleen and liver were enlarged. A scanty though characteristic eruption appeared on the sixth day. The passages were frequent and soft for about ten days but improved as the temperature began to subside. By the nineteenth day the temperature was returning to normal, the spleen was decidedly smaller and the stools were nearly normal. Repeated examinations of the blood showed no plasmodium malariæ and no Widal reaction, although the other cases from the same family failed to give the Widal reaction until the temperature had returned to the normal. The reaction then had been prompt and perfectly satisfactory and a similar reaction had been obtained a few days later. No typhoid bacilli could be found in the urine. Dr. Northrup was of the opinion that children under two years of age are but slightly susceptible to typhoid fever unless in epidemics when there are repeated exposures. In the many years of service at the New York Foundling Hospital, Dr. O'Dwyer, Dr. J. Lewis Smith and himself had never met with an undoubted case of typhoid fever in that institution.

Dr. James J. Walsh said that the opinion seemed to be gaining ground that cases of typhoid fever in which the Widal reaction is delayed are especially subject to relapse. He had himself had only two cases in children, one in a child of twelve and the other in a child of fifteen years, and the Widal reaction had first appeared on the twenty-sixth and twenty-eighth days respectively. Both cases had relapses. He was of the opinion that the Widal reaction is rather one of immunity than of infection.

Dr. Morse said he desired to emphasize the importance of the white blood count in typhoid fever. He would hesitate to make the diagnosis of typhoid fever where there was an increase of white corpuscles. This point would often help one earlier in the disease than the Widal reaction was usually obtained.

Dr. E. Libman said that he had had an extensive experience with the Widal reaction both in adults and children. In three years he had met with about 70 cases of typhoid fever in children as determined by the Widal reaction. Many of these cases had not given the usual clinical symptoms of typhoid fever but they had often been in families where adults were suffering from the same disease. The Widal reaction had proved of greatest assistance in the diagnosis of cases simulating pneumonia and meningitis. The dilution used had been 1 to 20 and the time limit not over fifteen minutes, for if a longer time were allowed the reactions became indistinct. He had found it most important to grow the bacilli at 30° C., and since doing this a very much larger proportion of Widal reactions had been noted.

PAROTITIS (MUMPS).

In children the following combination renders good service in treatment of the febrile stage:

℞	Liq. ammonii acetatis	℥ss
	Spts. etheris nitrosi	ʒii
	Aq. menthæ pip. q.s. ad	℥iii

M. Sig.—One teaspoonful every two or three hours for a child over five years of age.—*Jour. A.M.A.*

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting March 12, 1901.

The President, Dr. Thompson S. Westcott, in the chair.

Dr. J. A. Scott read a brief paper on **Intestinal Sand.** He made a short resumé of the literature, which includes but six or seven articles. La Boulbene in 1873 first reported a case in which sandy material, which proved to be vegetable matter with silicious particles attached, passed per rectum. He calls this material *sable intestinale.* Sheridan Delapine in 1880 reported four cases before the London Pathological Society, followed in more recent years by D. Thomas, Lamb, G. Shattuck, Dieulafoy, Matthew and Riechaud, R. S. Thomson and Alex. R. Ferguson and Eichhorst. Dr. Scott's first case was a patient of Dr. J. M. DaCosta's, a woman about 40, with no organic lesions, who passed gritty material with the stools. Examination showed it to be a light yellow or yellowish red concretion, not unlike coin dust in appearance, microscopically looking like uric acid, but careful examination by chemical methods showed absence of the latter. It was considered vegetable in its origin. The second case was that of a child aged 3¼ years, for eight months subject to attacks of duodenal and ileac catarrh with marked toxemic symptoms. In the beginning of these attacks, together with undigested curds and mucus, would be found a very firm gritty reddish or pinkish sand, which would disappear as the stools approached normal. After maceration in strong acids the sand would gradually soften with but little effervescence, and gummatous material, crystals looking like the fatty acids, such as are seen in fat neurosis and epithelial cells were found. The tendency for certain materials to remain for long periods in the intestine was remarked upon. A specimen of biliary sand (cholesterin) was also shown.

Dr. J. P. Crozer Griffith.—There is one source of foreign substances in the feces that we should never forget in children, viz. the purely extraneous matters which are idly swallowed. Children have so constantly a habit of putting all sorts of objects in their mouths—earth, sand, plaster from the wall, and so on—that it cannot surprise us if occasionally some of these appear in the stools. I have seen some curious instances of this sort. This, however, was not true in the child which I saw with Dr. Scott, for it was particularly carefully guarded, and it is certain that it did not at any time introduce any such foreign bodies into the mouth. It has always seemed to me possible that in some of these cases of true intestinal sand, such as Dr. Scott's cases represent, some insoluble organic salts of lime may constitute the material found. There is no positive proof of this, however, in Dr. Scott's cases.

Dr. ESHNER.—These cases are perhaps less rare than we are accustomed to believe, but in spite of Dr. Scott's suggestion I do not think that they can be common, Eichhorst recently reported the only two cases in his large experience which, I think, were not mentioned by Dr. Scott. Both of these occurred in neurotic women, who presented symptoms of mucous colitis, and it occurs to me that perhaps the condition may be, in some instances, a secretory neurosis, an abnormal secretion occurs from the intestine precipitating out the so-called intestinal sand after passing the intestinal wall, and thus giving rise to the appearance of sand in the intestinal contents.

Dr. GEORGE MCCLELLAN then delivered an address on the **Anatomy of Childhood** and exhibited a series of lantern slides prepared from personal dissections of the adult and child, which exhibited many of the anatomical differences at different periods of life.

NASAL DISCHARGES IN CHILDREN.

Do not diagnose accessory sinus trouble before the sinuses are developed; remember that the frontal sinus is not developed until the seventh year; that the antrum, although developed early, is quite small until after the second dentition, and that the ethmoidal cells have not bony walls until the fourth year, and at that age they are quite small.—Cobbledick, *Med. Rec.*

Dr. J. Madison Taylor has resigned the Professorship of Diseases of Children in the Philadelphia Polyclinic, a post which he has held for fifteen years.

ABSTRACTS

OBSERVATIONS ON MILK COAGULATION AND DIGESTION.

Franklin W. White, M.D. (*Journal of the Boston Society of Medical Science.*) says that the proteid element in cow's milk is the portion most likely to cause trouble in infants and other persons whose digestive powers are feeble. Various methods have been used to render it more digestible, such as diluting or peptonizing the milk, or the addition of mucilaginous substances to render the milk curd finer and softer that it may be more readily broken up and expose a larger surface to the action of the digestive fluids and also render the passage through the pylorus more easy.

The last method usually consists of diluting the milk with decoctions of cereals, such as oats, barley or wheat. His observations were made to determine: first, whether or not these cereal decoctions render the milk curd more fine and soft than a simple dilution with water; second, whether one cereal is better than another for this purpose; third, whether or not the property of yielding a fine curd is wholly due to the starch in solution, and if so what per cent. of starch is desirable; fourth, to test the value of certain modifications of the method which has been recommended; fifth, to determine the effect of lime water and albumen water upon the casein curd.

The following experiments were begun at the suggestion of Dr. T.M. Rotch, of Boston:

The coagulation of milk was first studied outside of the body in test tubes and the results confirmed later by animal experiments. In the experiments in test tubes the conditions which exist in the stomach were simulated as far as possible. The milk was kept at body temperature and was coagulated by rennet or dilute hydrochloric acid, or a mixture of the two, the amount of acid present being from 0.2 to 0.3 per cent., which is the acidity of the normal stomach of adults. The milk was gently agitated during the formation of the curd by inverting the test tube slowly a half-dozen times. The milk was mixed with an equal part of the diluent and 50 cc. of the mixture used in each case. As the coagulation of casein by rennet is somewhat different from its precipitation by dilute acids, a double series of observations were made. To one specimen of milk mixture, 2 or 3 cc. of an active solution of rennet were added. And to another, 1 to 1½ cc. of a 10 per cent. solution of HC; an excess of HC was avoided in order not to redissolve the precipitated casein. The coagulation always took place completely within a half minute with both acid and rennet. After noting the size and character of the curd it was usually shaken moderately for a moment to determine whether it was soft and easily broken up or tough and tenacious.

The results were as follows: Milk and cereal water in the strength used always yielded much finer curds than milk and water; the curds in the first place being soft firm and flocculent, and in the second, large, tough and cheezy. There was no qualitative difference in the action of HC or rennet as a precipitant. There was no difference in the action of cereal waters made from the grain or from flours; there was no practical difference in the action of the different kinds of gruels when made in the same strength.

The next step was to test these results in the animal stomach. Cats and dogs were used for the experiments, being fed with the same mixtures as were used in the test tube experiments, then killed one-half hour later and the stomach contents removed and examined. The results were as follows. The difference between the action of barley water and water as diluents was more striking, if anything, in the stomach than in the test tubes. Where water was used the casein was, for the most part, gathered in one or more solid rounded masses surrounded by rather clear whey. Where barley water was used it was in the form of soft flakes, evenly distributed. Where dextrinized barley water was used the curd was much coarser and tougher than with plain barley water and approached closely the curd yielded by milk and water. Photographs of these curds accompanied the article.

A few additional observations were made on the effect of adding lime water to milk. The experiments showed that the addition of lime water to milk simply prevents the action of rennet until the alkali is neutralized by the secretion of HC in the stomach but does not affect the character of the curd which is then formed. Probably the only effect of the small amount of lime water usually added to the milk in infant feeding is to neutralize some of the lactic acid which may be developed in it.

The conclusions from his observations may be summarized as follows:

1. Dilution of milk with cereal decoctions of proper strength renders the casein curd much more fine, soft and digestible than simple dilution with water. These is no difference in the action of various cereals, such as barley, oats, rice and wheat.

2. The above property is due mainly, if not wholly to the starch in solution, the most desirable amount of starch in the milk mixture for practical use is approximately ¾ per cent,

3, Diastase, by converting the starch to dextrin and maltose, promptly lessens and removes the action of cereal waters upon casein. In addition therefore is not a practical measure when the action upon the curd is desired.

4. Albumen water has no practical value as a diluent of milk.

5. Lime water added to milk has no more effect than water upon the character of the curd produced in the animal stomach.

WHOOPING COUGH CURED BY IRRIGATION OF THE NARES.

Ed. Marten Payne (*Brit. Med. Jour.*, May 4, 1901) says: It is admitted by all authorities that the mortality due to pertussis is very great while it is at the same time confessed that "the treatment of whooping cough is one of the opprobria of medicine," and that "notwithstanding the claims of many to the contrary, it remains a fact that we possess no means of cutting it short." (Tyson).

Having been consulted with reference to a boy, aged 9, who was suffering from a very severe attack of the disease, and having in vain had recourse to the usual remedies, the author determined to work on the theory that the disease was due to the irritation of the Schneiderian membrane by a specific organism. What the specific organism was, whether it was the larva of an insect according to Linnæus or the bacillus of Koplik did not much matter as far as treatment was concerned. Acting on this hypothesis, 10 to 20 ounces of carbolic lotion (1 in 40) were injected by a syringe through the nostrils, being allowed to go up one and down the other, the operation being repeated three times a day. At first the irrigation caused a good deal of sneezing and coughing, and a considerable amount of gelatinous mucus, some of which was a greenish color, was ejected. After a few times the operation caused less discomfort and the patient, who was at first rather refractory, at last began to look forward to it as a relief to his sufferings. The cure was complete in about a week but the treatment was continued a few days more to prevent recurrence.

LIME BURNS OF THE CORNEA.

E. S THOMPSON (*Post-Graduate* April, 1901) says: The most common injury to the cornea is undoubtedly the so-called lime burn. The powdered lime is thrown into the eye or splashes up from the "slacking" bin and strikes the eye of the workman. The consequences are out of all proportion to the relative seriousness of the burn, and we are almost certain to have a corneal ulcer if the burn is anything more than a very slight one.

Corneal ulcers are always more severe in lime burns, and if we have an ulcer to start with there is usually wide destruction of the cornea, with hypopyon, iritis or other deep complications; in any event the prognosis is always grave.

In those unfortunate cases which come in with the cornea milk-white the result is invariably blindness. The milk-white appearance means that the superficial layers are destroyed. The conjunctival burn will, of course, be equally severe, and there will be chemosis and swelling of the lids and discharge. After a few days the cornea becomes clearer in the center, and for a time it may appear to improve, but this is merely the beginning of the end, Decemet's membrane bulges through more and more, and it is this which gives rise to the appearance of clearing. Perforation soon follows and the aqueous escapes. We have by this time entire destruction of the cornea except for a narrow rim around the edge and the peculiar rosette-shaped figure in the center which is the iris, covered by a layer of lymph. As the inflammation subsides we have dense, fibrous tissue occupying the site of the cornea which alone would destroy vision with destruction of the anterior lymph circulation through involvement of the iris, and therefrom a shrunken eyeball or phthisis bulbi.

The researches of Randolph in the so-called oyster-shuckers keratitis (*Johns Hopkins Hospital Bulletin*, Nos. 56–57, Nov. and Dec., 1895) throw light on the peculiarly irritating action of lime on the cornea. He observed that injuries of the cornea by small flying particles of oyster-shell were followed by rapid necrosis, much more severe than occurs in like wounds by steel or stone. Through an elaborate and careful series of experiments he found that bacteria play little or no part in this disease the necrosis coming from the violently irritating action of the lime in the oyster-shell upon the corneal tissue.

Treatment in lime burns of even moderate severity should be instituted at once and faithfully carried out, for we can never tell how serious the consequences may be. The lime should be picked out at once or even scraped forcibly from the conjunctiva should it adhere in large cakes, as it often does. It has been suggested that the cul-de-sacs should be flushed out with a weak mixture of vinegar and water, the idea being to neutralize the particles that are too small to be seen. This idea, however, does not commend itself, as it is only reasonable to suppose that the small particles are quickly dissolved and the large pieces are better picked out *en masse* without the addition of another irritant, even though it be a weak one. The patient should be put to bed and the eye cleansed constantly with warm boracic acid solution. The pupil should be kept dilated with atropin, and applications of hot water (15 m.q.h.) should be used to stimulate the cornea. Ice is absolutely contraindicated. Internal stimulation should not be neglected though it does not seem to help much in resisting the corneal necrosis. nor, for that matter, does any means that we know of. One very important thing is to keep the cul-de-sac full of oil all the time. A drop of castor-oil or pure hydrocarbon oil is instilled into the eye every hour or two, or as often as it is necessary to keep some there. It has two beneficial actions: it coats the cornea and keeps the rough and swollen conjunctiva from rubbing over it and also renders the conjunctiva less likely to adhere. In suitable cases the probe should be passed daily to the bottom of the cul-de-sacs as already mentioned. The course of healing is likely to be protracted, as it takes an eye a relatively long time to recover from a lime burn.

REPORT OF A CASE OF ABSCESS OF THE BRAIN IN A CHILD SIXTEEN MONTHS OLD.

F. E. Bunts (*Cleveland Jour. of Med.*, April, 1901) says: On October 17, 1900, I first saw baby Stanton, aged 16 months, at my clinic at the Charity Hospital. The patient had been coming to the dispensary for a few days preceding, The history given by its mother was that about six weeks previous to that time the child was hit in the head by a piece of tin cutting a small gash in the scalp, No particular attention was given to the slight scalp wound and no symptoms of any importance were present. Various salves and ointments had been applied to the wound but it had not healed up to the time it was brought to the dispensary. The cause of bringing it to the dispensary was the fact that it had had a convulsion about three days previously.

Dr. Griffiths, who first examined the case, noticed that there was present a slight paralysis of the right leg and arm. The wound was cleansed and dressed and the patient did not appear at the dispensary again for several days, when it was brought back with a history of its having had another convulsion, About ten days after its first appearance at the dispensary I saw the child at my clinic. There was present a small, unhealthy granulating wound about the size of the little fingernail, located on the left side near the upper extremity of the fissure of Rolando. The child was very irritable, and the wound seemed to be quite painful. I could not by palpation determine the presence of any lesion of the skull. The paralysis was more marked in the arm than in the leg. Being somewhat in doubt as to the true cause of the paralysis, I asked the mother to bring the child to my next clinic for examination and, if necessary, for operation. One week subsequent to this I saw the case for the second time, and at my request Dr. H. S. Upson examined it with me. The paralysis now present was decidedly more marked than at the first examination. The leg remained very much as at the first examination, but the arm was almost completely paralyzed and there was also evidence of paralysis of the right side of the face. The knee-jerk was easily elicited, though it was difficult to get a reflex at the elbow. The question of diagnosis rested chiefly between the possibility of its being an infantile paralysis or a paralysis due to abscess of the brain following a septic infection of the scalp.

In infantile paralysis the onset is commonly sudden, and the form is liable to be paraplegia. It is painless, and its maximum is reached in a few hours, motion only being affected. The paralysis is speedily followed by atrophy and partial improvement, and electric examination soon shows the characteristic reaction of degeneration. In paralysis from cerebral abscess we would expect the symptoms to be of long duration, with the probable history of injury or infection and the common accompaniment of a convulsion. The paralysis ordinarily develops more gradually and the facial muscles become involved which, of course, does not occur in infantile paralysis. Another symptom of considerable importance is the presence of exaggerated tendon-reflex in cerebral paralysis. In contrasting these chief points of diagnosis it would seem that the diagnosis of cerebral abscess in this case should not have been difficult to arrive at. The paralysis had gradually extended into the leg, arm, and thence to the face. Its onset had been marked by several convulsions; there was a history of injury; there was evident pain and fever and there was the presence of the tendon-reflex at the knee, though at the elbow it could not be satisfactorily obtained. There was no improvement in the paralysis; on the contrary, it was gradually increasing. Nor did the paralysis reach its maximum in a few hours, but rather in a number of days. On the other hand, the length of time which had elapsed since the receipt of injury might serve to divert one's belief from this as the immediate exciting cause, and the occurrence of convulsions is not so uncommon in children as to make its diagnostic importance when considered alone of any great value. The appearance of paralysis primarily in one leg, where it remained some little time before the involvement of the arm and face made the character of the difficulty more evident, might possibly lead one astray. However, when all the symptoms were grouped together, as they appeared on October 24th, the diagnosis of abscess of the brain seemed absolutely certain. Accordingly the patient was immediately prepared for operation.

For some time after the operation improvement seemed to be positive. The leg became distinctly better and motion was regained in the arm so that the baby could reach for things and even strike its nurse. One time about ten days after the operation the baby was seized with a convulsion and thinking that there might be another accumulation of pus, since the drainage had been very unsatisfactory, I probed in hopes of locating the accumulation but did not succeed in doing so. The stupid condition which followed this convulsion soon cleared up and it was thought that it was probably due to an error in diet. However, the general condition was not very satisfactory; two days before death facial paralysis became marked, the child fell into a stupor and so remained.

The autopsy showed the dura to be tightly adherent to the bone, and the brain to be very soft. Pus was found in various parts of the brain, and it had gravitated down as far as the foramen magnum. The pus found at the base of the brain showed pure culture of streptococci.

FLOATING KIDNEYS IN CHILDREN.

I. Abt (*Jour, of A.M.A.*, April 27, 1901) reports five cases of floating kidney in children. The references to this condition in pediatric literature are very few. Comby reported eighteen cases in children varying in age from one month to ten years, sixteen of the cases occurring in girls. (The observations of Comby seem to negative the importance of corsets and tight lacing in the production of this affection in women. These causes have been advanced to account for the frequency with which the kidney is dislocated in women and its comparative infrequency in men, a proportion variously estimated at from 1 to 20 to 1 to 100).

We are compelled to accept the congenital origin of floating kidney in young infants and it is probable that in older children there is a congenital predisposition. The exciting causes may consist of an acute or chronic trauma, the latter having reference to causes which are constantly acting or which are of frequent occurrence, eventually dislodging the kidney from its fixed position. In two of the cases which came under his observation there was marked pulmonary emphysema associated with chronic bronchitis.

In children as in adults the symptoms are often latent. Pain is sometimes noted where the mobility is of moderate degree. In some cases the patients suffer from paroxysmal pain, dependent probably upon a twisting of the pedicle. Associated with the pain may be colic, chills, fever, vomiting and perspiration. The urinary secretion may be diminished and temporary or permanent hydronephrosia result from the twisting of the ureter. The kidney is usually sensitive, though not actually painful on pressure. Gastrointestinal symptoms are not infrequently associated with floating kidney; dyspepsia and constipation are often present. In the five cases reported by Abt, three were girls and two were boys.—*Medicine*, June, 1901.

THE INFLUENCE OF BORIC ACID, BORAX AND FORMALDEHYDE ON NUTRITION AND TISSUE-CHANGE IN CHILDREN.

The extensive use of these agents in food, in spite of the energetic efforts of health authorities, makes any information concerning their physiological actions of much interest. The data in this field have been accumulated by many observers and in different ways. Some have experimented merely in test-tubes and flasks, studying especially the influence on digestive processes; others have made prolonged studies of the effect on the lower animals when fed with articles containing notable amounts of the preservatives, Both these methods are subject to criticism from the clinical point of view. It is not safe to trust much to negative results obtained in the chemical or physiological laboratory. The human organism is very sensitive and will be unfavorably influenced by conditions which will not disturb the digestion of a starch solution by diastase or the functions of a small animal. So far as these classes of experiments may be taken as a guide, it appears that neither boric acid, formaldehyde hyde nor borax exerts any marked influence on ordinary digestion or nutrition.

Important contributions to the subject are found in papers recently published by F. W. Tunnicliffe and O. Rosenheim (*Journal of Hyyiene*, April, 1891; *Centralbl. f. Physiolog.*, April 27, 1901) who have made experiments by feeding apparently healthy and delicate infants with articles containing these preservatives and making careful analytical and other observations as to the effects on nutrition and metabolism. They arrive at the following conclusions, which are not likely to strengthen the hands of those who wish to restrict the use of such agents.

Boric acid in small doses up to one gram per day produces in healthy or delicate children no change in proteid metabolism and no appreciable influence on the assimilation of fat. The body weight is increased. Similarly, borax in 1.5 grams doses per day produces no influence on proteid metabolism or assimilation of fat and the body weight is increased. The amount of dry feces is slightly increased with borax but not with boric acid. A mixture of boric acid and borax (which has been found to be a better preservative than either alone) is quickly eliminated and does not act unfavorably.

Concerning formaldehyde, the observers find as follows: Formaldehyde added to milk in the proportion of 1 to 5000, or to the entire ailment in proportion of 1 to 9000, has no appreciable influence upon the more important phases of healthy children, but with debilitated children some interference is shown. With these the quantity of urine and dry feces is increased. The excretion of lecithin is decreased. In no case was any unfavorable influence upon the general health of the children noticed. Neither borax, boric acid nor formaldehyde exerted any antiseptic action upon the intestinal contents. The proportion of formaldehyde used in the milk was considerably in excess of the amount required for ordinary preservation.—Editorial, *Phila. Med. Jour.*, July 6, 1901.

THE DISTINGUISHING CHARACTERISTICS BETWEEN MILD DISCRETE SMALLPOX AND CHICKENPOX.

Frederick Leavitt (*Jour. A.M.A.*, Aug. 3, 1901) in an article on this subject gives the following summary:

SMALLPOX.	CHICKENPOX.
Any age.	Childhood.
Incubation, two weeks.	Incubation, thirteen to seventeen days.
Headache, backache, fever, general malaise; lasting three or four days.	No prodroma, or at most only slight indisposition.
Worst on the exposed parts—extremities; invariably on the palms.	Worst on the covered portions—thorax; rarely or never seen on the palms or soles.
Progressive eruption; papules, vesicles, pustules, crusts.	Vesicles and crusts.
Lesion includes the lower layers of the derma. Hard to rupture; multilocular.	Lesion very superficial; easy to rupture; unilocular.
Temperature high (103-105) till eruption appears; then drops and does not rise again for a week, and not then in the milder discrete forms.	Rises with the severity of the attack.
Eruption quite uniform in size; has a reddened area at base; frequently umbilicated.	Not uniform; also inflamed area about the vesicle, but less marked.
Painful to the touch; may itch.	Not painful to touch.
Lasts two to four weeks.	Lasts one week to fourteen days.
Vaccination protects.	Does not protect.
Pits when confluent on face; will occasionally mark in the discrete form.	Seldom unless infected.
Generally no complications.	No complications.
High mortality in the severe confluent and hemorrhagic types.	Nil.
Resolution by crisis.	Resolution by lysis.

INJURIES OF THE HEAD IN THE NEW-BORN.

Andrew F. Currier (*Med. News*, Aug. 3, 1901) says that the importance of this class of injuries is measured not merely by the immediate damage to the head or soft parts of the skull, but by the possibilities of death as a near or remote result, by the possibility of life-long defect or deformity, and especially by such detrimental effect upon the structure of the brain, which effect cannot always be analyzed or explained, that development is arrested or prevented, the individual manifesting mental incompetence in any degree from slight backwardness to hopeless idiocy. The significance of the lesions which may be received is not fairly appreciated by the medical profession and this gives increased importance to the subject.

No one will deny that the obstetric forceps are used far more frequently than they were a generation ago. The result has been, on the whole, favorable to safe delivery and subsequent well-being of the child, but a train of evils has also attended the use of this benificent instrument, including its untimely or injudicious or unskillful application with occasional destructive results to the mother and very frequent damage to the child, its head being bruised, the bones fissured or fractured, the blood vessels torn and the brain compressed.

The injuries which are under consideration may be received during natural labor or during artificial or assisted labor. They may involve (1) the parts external to the cranium; (2) the bones of the cranium; (3) the structures within the cranium. They may result (*a*) in immediate death; (*b*) in death after a few days or months; (*c*) in recovery, but with permanent lesions of the skull, and possibly with such injury to the brain that mental development may be permanently retarded or wholly checked and paralysis render certain areas of the body useless or ineffective; (*d*) in recovery with disappearance of all evidence of the injury received.

ULCER OF THE STOMACH CAUSED BY THE DIPHTHERIA BACILLUS.

William R. Stokes (*Johns Hopkins Hospital Bulletin*, July, 1901) says that although the diphtheria bacillus has been known as the cause of various inflammations of the respiratory tract for some little time, yet it has but recently been described in connection with such atypical conditions as diphtheritic inflammation of the conjunctiva and the external auditory meatus. Diphtheritic infection of wounds of the skin and diphtheritic vulvo-vaginitis have also been observed.

Schoedel has recently reported a case of fibrinous inflammation of the gastric mucous membrane, due to the diphtheria bacillus.

This writer first reviews the literature, mentioning the fact that Klebs and Loeffler have both described cases of gastric diphtheria in which they demonstrated their bacilli in stained sections. Wright also found diphtheria bacilli in the stomach in two out of fourteen autopsies on diphtheria.

Schoedel's case was that of a child who died of faucial diphtheria without any gastric symptoms. The uvula contained a grayish membrane, but the esophagus was normal. The mucous membrane of the stomach was very red and covered here and there with a gray adherent membrane. The lymphatic structures of the intestine were swollen. A culture from the membrane made on Loeffler's blood serum showed a large number of typical diphtheria bacilli and these were also demonstrated in stained sections. The writer also found virulent diphtheria bacilli in the stomach of two children dead from diphtheria, and in one of eight cases he was able to demonstrate the bacillus in cultures from the feces by means of its typical bipolar stain.

Schoedel thinks that the acid gastric juice can usually destroy a small number of diphtheria bacilli when they are swallowed, and that primary diphtheria of the stomach is thus wellnigh impossible. In cases of widespread diphtheria, however, when the gastric acid is lessened in amount large numbers of diphtheria bacilli are apt to bring about some local lesion of the mucous membrane of the stomach when once swallowed. Although these cases are not usually detected at the bedside their existence should not be lost sight of by the clinician.

CLINICAL REPORT.

The patient was found on the streets and was referred to the Department of Health for treatment owing to the fact that there is no infectious hospital in the city.

Cultures taken from the throat on two separate occasions showed the presence of diphtheria bacilli. A cot was provided for the patient in a vacant room and a nurse was placed on duty.

The fever remained high for several days, and the membrane gradually disappeared from the tonsils, as the patient received 10,000 units of antitoxin in about four days. About the sixth day of treatment, and when the membrane had almost disappeared from the throat, the temperature fell and even became subnormal. The patient also complained of pain and hyperesthesia in the epigastric region and died about ten days after being admitted for treatment at the Health Department. It was impossible to find out how long the patient had suffered from diphtheria before he was seen at the health office.

REPORT UPON AUTOPSY.

The stomach showed an ulcer 2½ cm. by 1 cm. near the pylorus, in the most dependent portion of the greater curvature of the stomach. It was covered with a dark-yellow membrane, in places almost black. The surface was necrotic beneath. The rest of the mucous membrane of the stomach was normal in appearance, and the intestines were also normal.

The ulceration had only extended as far as the muscular coat, where regeneration had already begun. The hyaline degeneration of the submucus coat and the eroded blood vessel were well shown in the accompanying illustration.

STOMACH.

The ulcer of the stomach consists of an extensive mass of coagulative necrosis which has entirely replaced the mucous membrane. This necrotic area extends well down into the submucosa, and laterally it has undermined the mucous membrane. This overhangs the necrotic area on either side. Beyond the necrotic material and limiting the extension of the lesion in the submucosa on either side of the ulcer, the tissue has undergone hyaline degeneration, only a few strips of connective tissue having still retained their nuclei. Portions of this hyaline tissue are dotted with small, irregular hemorrhages. This thin strip of hyaline degeneration and hemorrhage extends from the sides to the bottom of the ulcer forming its base and separating the ulcer from the normal muscular coat beneath. That portion of the base just adjacent to the normal muscle is richly infiltrated with newly formed connective tissue cells of various sizes and shapes, indicating the beginning of regeneration at the base of the ulcer. The base of the coagulative necrosis in the ulcer contains a moderate number of pus cells. On applying Weigert's fibrin stain no fibrin could be demonstrated in the sections.

The diphtheria bacilli in the stained sections are limited to the necrotic material and are more numerous on the surface of the ulcer. They are irregularly distributed throughout the entire area of necrosis, but are so densely packed together in a meshwork on the surface as to render individual inspection of bacilli impossible. Many of these organisms are very long and some are spiral-shaped. They are about the width of the diphtheria bacillus, however, and may be long forms. Most of the bacilli present the usual appearance of diphtheria bacilli in cultures, but there are some rather large square-ended organisms about the size of an anthrax bacillus, which may be unknown organisms which failed to grow in the culture from the ulcer. Even under the low power of the microscope the masses of bacilli are quite apparent on the surface as homogeneous or scattered blue foci. On examining the borders of contact between the necrosis and the thin line of pus cells, the abrupt ending of the bacilli just at the line of contact with the neutrophilic leucocytes might well answer to the fanciful description of two armies just about to engage in a battle.

The next annual meeting of the Mississippi Valley Medical Association, under the Presidency of Dr. A. H. Cordier, of Kansas City, will be held at Put-in-Bay September 12th. The address on Medicine will be made by Dr. Frank Billings, of Chicago; the address in Surgery by Dr. Reginald Sayre, of New York City. The Association is to be congratulated on the selection of these two orators. The profession is cordially invited to attend.

Dr. A. Jacobi, 110 W. 34th St., has removed to 19 E. 47th St.

PEDIATRICS

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Vol. XII. SEPTEMBER 15th, 1901. No 6.

SOCIETY REPORTS

THE BRITISH MEDICAL ASSOCIATION.

Annual Meeting, Cheltenham, July 31, 1901.

President-Elect G. B. Ferguson, M.D.

SECTION ON DISEASES OF CHILDREN.

First Day's Proceedings.

Mr. Frederick Eve, F.R.C.S., in the Chair.

Mr. Eve, in opening the Section, said we were put together, not to hear a presidential address, but to listen to a discussion, and, accordingly, he had much pleasure in calling upon Mr. Bernard Pitts to introduce the subject of **The Treatment of Intussusception.**

The discussion was opened by Mr. Bernard Pitts, F.R.C.S., who said:

When asked to open a discussion on this subject I consented with some hesitation, for in June, 1887, I contributed a paper to the *Lancet* on seven consecutive cases of intussusception in infants treated by abdominal section with six recoveries and I have little to add to the remarks then made on the relative value of manipulation and distention of the large bowel by water or air and the treatment by abdominal section. I then stated that it is not possible or right from a small sequence of cases to lay down rules applicable to all conditions, but the following suggestions were made:

1. In cases of acute intussusception distention of the bowel by air or water continued with gentle external manipulation may be tried under an anesthetic, but the surgeon should be present and prepared at once to open the abdomen if a satisfactory result is not quickly obtained.

2. An exploratory operation should be undertaken without preliminary inflation when, from the severity of the symptoms or the chronicity of the case, there is reason to believe that the results of inflation are not likely to be satisfactory.

3. The median incision is most suitable in the majority of cases, but when the tumor is in the cecal region a limited incision in the right semilunar line may be convenient. For the reduction of the final portion of the intussusception the tumor should be brought outside the wound so that the operator may clearly see the condition of the bowel and make sure that the reduction is complete. Thickening about the ileocecal valve may be mistaken for an incomplete reduction. When in doubt an incision may be made into the colon and the parts examined from within the bowel.

4. If reduction is impossible or if gangrene has occurred resection of the bowel is necessary. In some cases resection of the irreducible portion may be performed from within the bowel. Gangrene is usually fatal in young children.

Since the above paper was written 115 cases have been treated in St. Thomas's Hospital (see table) and in the light of the further experience so gained it might be of interest to reconsider the conclusions reached in 1875. In the table 105 cases were children under twelve years of age and of these 36 recovered.

Primary abdominal section is now the rule on admission to hospital and since this rule was adopted the results have been 48 cases with 27 deaths and 21 recoveries. There was, however, also one recent acute case which was treated by water pressure and recovered.

The table seems to indicate that the number of cases is increasing. This is probably due to the cases being recognized earlier by practitioners and sent more quickly into the hospitals.

In the cases which had died and on which a post-mortem had been held an average of sixty-two hours had passed before treatment. By this time reduction was impossible and the case hopeless. In recent years there had been much less of this unreasonable delay.

In connection with the series of seven cases published in 1887 I remarked that no one could expect such success to continue, and as a matter of fact, I had some time afterwards three cases at Great Ormond Street Hospital within the same twenty-four hours, all of which proved fatal.

In one of the cases, in 1881, the intussusception could be felt from the anus from the time of admission. Inflation made no impression, but when the child was inverted and the tumor manipulated gently through the abdominal wall it receded to the splenic region. Then inflation produced further reduction and the child recovered.

Of the 49 cases recently in St. Thomas's, inflation, as already mentioned, was the method of treatment in only one case. We have found that immediate operation gives the best results in hospital cases. Many of these have already been treated by injection or inflation before admission.

The most unsatisfactory feature of injection is that one is never certain that success is complete. In operating upon infants one is struck by the difficulty in effecting complete reduction even when manipulating the bowel *outside* the abdomen. It is often difficult to say whether the thickening present is due to incomplete reduction, to edema, or to some other condition, such as polypus within the bowel. Gangrene may occur within a few hours in some cases while in others which have lasted for days or even weeks reduction may still be readily effected.

I would reserve inflation or injection for acute cases seen within a very few honrs. Sometimes inflation is useful as a preliminary, as it limits the field of operation. Even if reduction should seem complete it is useful to make sure by means of a small incision. Water pressure is better and less dangerous than air. It should be introduced through a small funnel, held not more than 2 feet above the level of the patient.

Shock must be minimized by warmth and by rapidity of operation. The abdomen if distended should be opened in the middle line, an incision made in the distended intestine and air and contents allowed to escape. The incision in the intestine is then closed. The intussusception is now easily reached and time is saved in the end.

The case was quoted of a boy of 15 years, who, after eating a pint of cherries, was seized with vomiting and abdominal pain. He improved under treatment but on the fifth day became rapidly worse. There was distention in the cecal region, vomiting and a low temperature. Dr. Haig Brown diagnosed intussusception. I opened the abdomen, evacuated the dilated intestines through an incision and found an intussusception in the hepatic region. This was enteric in origin and could not be reduced. On opening the ilium an inverted Meckel's diverticulum was found with great edema of the bowel. The boy made a rapid recovery which was greatly aided by free evacuation which had also allowed a complete examination to be made.

In effecting reduction a common accident is splitting the peritoneum of the ensheathing bowel; manipulation should be

CASES OF INTUSSUSCEPTION TREATED AT ST. THOMAS'S HOSPITAL FROM 1875 TO 1900 INCLUSIVE.

Date.	Sex.	Age.	How long Ill	Variety.	Treatment.	Result.—P.M
1875	F.	6 months	3 days	Not stated	Inflation followed by celiotomy	D. within 1 hour.
1876	M.	under 5	Not stated	Ileocecal	Injection of water	D. P.M.; unreduced.
1877	No	cases.				
1878	F.	3 years	Not stated	Ileocecal	Palliative	D. on 4th day. P.M. Intussusception discovered; general peritonitis.
1879	M.	9 months	3 days	Not stated, but felt within 2 inches of anus	Two unsuccessful attempts at reduction by inflation	D. on 6th day, tumor still palpable; no P.M.
1880	M.	3 months	3 days	Ileocecal	Celiotomy; reduction not effected; tumor not returned; later, inflation and injection, without result	D. 3 hours after operation. P.M. Irreducible. No peritonitis.
"	M.	3 months	3 days	Iliac connected with a vitelline duct	Celiotomy; reduction not effected	D. P.M. Peritonitis.
"	M.	6 months	2 days	Not stated; felt 2 inches from anus	Enema	D. on second day. No P.M.
"	M.	6 months	2 days	Ileocecal	Celiotomy; resection; implanfation anastomosis.	D. 4 hours after operation.
1881	M.	4½ months	8 hours	Not stated	Inflation and manipulation under anesthetic	Reduced. C.
"	M.	4 months	12 hours	Ileocecal	Inflation under anesthetic on 2 successive days, followed by enemata	D. 6 days after admission. P.M. Not reduced.
1882	F.	7 months	3 days	Ileocolic	Inflation	D. within 12 hours. P.M, Not reduced.
1883	M.	2 years	3 hours	Enteric, 6 feet from pylorus, 2 inches long	Nil (not diagnosed)	D. on 2d day. P.M. Easily reducible. No peritonitis.
"	M.	3 years	2 days	Not stated	Inflation, followed by enemata, on two successive days	Reduced. C.
1884	M.	4 months	1 day	Ileocecal, 3 inches long	Celiotomy and reduction	D. on 2d day.
"	M.	3 months	Not stated	Ileocecal; felt per anum	Not stated	D. within 24 hours. P.M. Unreduced.
"	F.	7 months	4 days	Not stated	Enemata	Reduced. C.
1885	M.	5 months	2 days	Ileocecal, 2 feet long	Inflation and enema, uot successful: then reduced by celiotomy	D. 2 hours after operation. P.M. Completely reduced.
"	M.	8 weeks	1 day	Not stated (symptoms of intussusception, but no tumor felt, and rectal examination negative)	Enemata	C.

1886	F.	47 years	"Chronic." Time not stated	Protrusion of ileocecal valve at anus	Celiotomy; resection end sutured to abdomen wound	D. on 2d day. P.M. Peritonitis.
"	F.	5 months	1 day	Ileocecal; felt per anum.....	Reduced by manipulation; recurred same evening; inflation unsuccessful; reduction by coliotomy next day	D. on day after operation. P.M. Peritonitis.
1887	M.	3 years	1 day	Ileocecal; felt per anum.....	Enema unsuccessful; inflation under anesthetic apparently successful	D. on 3d day. P.M. Unreduced 4 inches long. No peritonitis.
"	F.	8 months	2 days	Ileocecal; felt per anum.....	Inflation under anesthetic 2 hours after admission; reduction	C.
1888	M.	4 months	2 days	Not stated; felt per anum...	Inflation under anesthetic; apparent reduction; recurrence in 4 hours; celiotomy; reduction of all but last inch; resection, artificial anus	D. 2½ hours after operation. P.M. No peritonitis.
"	F.	6 months	2 days	Ileocecal, 4½ inches long.....	Nil, owing to collapse..................	D. within 12 hours. P.M. Irreducible. Peritonitis.
1889	F.	10 months	2 days	Not stated; protruded at anus	Inflation under anesthetic; reduced....	C.
"	M.	7 months	Not stated	Ileocecal, 8 inches long.......	Not stated. (Only P.M. report available)	P.M. Easily reduced by injection of water per rectum; no peritonitis.
1890	No	case				
1891	F.	2 months	18 hours	Not stated; tumor felt; not felt per annm	Inflation under anesthetic; reduced....	C.
"	F.	3 months	1 day	Not stated; tumor felt.......	Inflation under anesthetic; reduced....	C.
"	M.	4 months	1 day	"Small into large intestine"	Inflation..............................	D. on 2d day. P.M. Partially reduced.
1892	F.	16 years	7 days	Enteric, 3 inches long, 3 ins. above ileocecal valve. Gangrenous intussusceptum...	Celiotomy; resection; end to end anastomosis; lavage of peritoneal cavity; drainage. fecal fistula 8th day. peritonitis	D. on 9th day.
"	M.	32 years	4 months	Cecal, with malignant growth as starting point	Resection; lateral anastomosis..........	C.
"	F.	7 months	3 days	Not stated; tumor felt; not felt per anum	Inflation under anesthetic; reduced ...	C.
"	M.	3 months	10 hours	Ileocecal.....................	Inflation under anesthetic; apparent reduction	D. within 24 hours. P.M.: Not reduced, but easily reducible by manipulation.
"	M.	7 months	Not stated	Ileocolic.....................	Celiotomy; incomplete reduction.......	D. within 24 hours. P.M.: 2 inches of ileum still intussuscepted and fixed by adhesions. Peritonitis.
"	M.	4 months	2 days	Not stated; tumor felt.......	Celiotomy; nothing abnormal detected.	D. on 3d day. No. P.M.
1893	M.	4 months	24 hours	Ileocecal; felt per anum......	Inflation; apparent reduction; recurrence next day; frequent inflation	D. from exhaustion. P.M.: Unreduced. Easily reducible by manipulation.

Cases of Intussusception—*Continued.*

Date.	Sex.	Age.	How long Ill	Variety.	Treatment.	Result—P.M.
1893	M.	6 months	24 hours	Ileocecal; felt per anum	Inflation	D. on 2d day. P.M.: Unreduced.
"	M.	18 years	5 weeks	Ileocecal	Celiotomy; partial reduction; resection of remaining part; was gangrenous	C.
1894	M.	32 years	1 day	Enteric; papillomatous growth	Celiotomy; reduction and removal of growth; incision of fecal abscess 11 days later; resection of gangrenous bowel (Murphy's button)	D. on 22d day. P.M.: No leakage at anastomasis.
"	M	8 years	2 days	Ileocecal	Celiotomy; reduced	C.
"	M.	6 months	2 days	Not stated	Celiotomy; no intussusception found; appendicectomy	D. on 3d day. P.M.: Ulceration of mucous membrane.
"	F.	32 years	13 weeks	Chronic ileocecal	Nil	D. on 3d day. P.M.: 12 inches long. Acute perforative peritonitis. Fibroid growth in cecum.
"	F.	3 months	7 days	Not stated	Inflation; reduced	C.
1895	F.	7 months	24 hours	Ileocecal	Inflation; partial reduction; celiotomy; reduction	D. on 3d day. P.M.: Cause of death not ascertained.
"	M.	31 years	8 days	Enteric, 18 inches from ileocecal valve	Celiotomy; resection and enterostomy.	D. on same day. P.M.: Peritonitis.
"	M.	6 months	Not stated	Ileocecal	Celiotomy; reduced	D. on same day. P.M. Peritonitis.
"	M.	7 months	1 day	Not stated	Manipulation—enema; reduced	C.
"	F.	4 months	14 days	Ileocecal	Inflation failed; celiotomy—reduction	D. on 4th day. P.M.: Completely reduced. No peritonitis.
'	M.	17 months	3 days	Not stated; appendix protruded through anus	Inflation; (too collapsed for operation).	D. on second day. No. P.M. report.
"	F.	7 months	24 hours	Ileocecal	Inflation failed; celiotomy; reduction	D. on 2d day. P.M.: Completely reduced. No peritonitis.
1896	M.	3½ years	1 day	Not stated; tumor present; not felt per anum	Inflation under anesthetic failed; celiotomy; reduction	C.
"	M.	10 months	1 day	Ileocecal, 4 inches long	Inflation	D. within 24 hours. P.M.: Found unreduced
"	M.	5 months	4 days	Not stated; felt per anum	Nil	D. on 7th day P.M.: Reduced.
"	F.	4 3-12	6 days	Enteric; gangrene of gut	Enemata unsuccessful; celiotomy; resection; anastomosis. *Median incision: brandy enema: strychnine — morphia hypod*	D. within 24 hours (5 hours after operation).
"	M.	19 weeks	6 days	Ileocecal	Enterostomy; not reduced; *median incision*	D. within 24 hours.

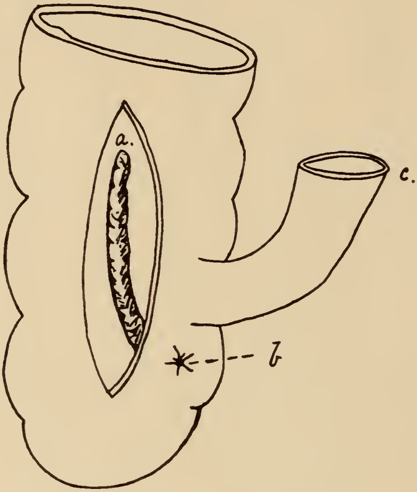
1896	F.	6 months	2 days	Colic; 2 inches long	Celiotomy; reduction; *brandy—strychnine.*	D. within 24 hours.
"	F.	5	7 days	Appendix into cecum, and cecum into colon	Celiotomy; reduction; *median incision above umbilicus; Tr. opii.*	D. within 24 hours.
"	M.	10 months	6 hours	Ileocecal; felt per anum	Celiotomy; reduction	C.
"	M.	4 months	3 days	Ileocecal	Celiotomy; no intussusception found; probable spontaneous reduction	D. in a few hours. P.M.: Congestion of ileum—colon.
"	M.	51 years	5 days	Ileocecal	Celiotomy; no intussusception found; probable spontaneous reduction; appendicectomy	D. on 6th day. P.M.: Reduced.
"	M.	18 months	4 days	Ileocecal; felt per anum	Celiotomy; reduced	D. within a few hours (shock). P.M.: Incompletely reduced.
1897	M.	4 months	1 day	Not stated; not felt peranum	Celiotomy; reduced; much shock	D. on second day. P.M.: Reduced. Localized peritonitis.
"	M.	5 months	Not stated: (No notes)	Ileocecal, 3½ inches long.	Celiotomy; not reduced; median incision below umbilicus	D. within 24 hours. P.M.: Irreducible. Slight peritonitis.
"	M.	3 months	3 days	Ileocecal	Celiotomy; reduced; median incision below umbilicus; brandy by mouth and in *nutrient enemata*	D. within 24 hours. P.M.: Slight peritonitis.
"	M.	4 months	4 days	Ileocecal: rupture of intussuscipiens	Celiotomy; resection; enterostomy	D. within 24 hours (3 hours after operation). P.M. No peritonitis.
"	M.	4 months	6 days	Ileocecal	Nil, owing to collapse	D. very shortly after admission. P.M. Irreducible ileocecal.
"	F.	5 months	1 day	Ileocecal	Celiotomy; reduction; median incision; above umbilicus; *brandy and strychnine;* much shock	C.
"	F.	2½	Not stated	Not stated; protruded from anus	Manipulation; reduced	C.
"	F.	2½	Not stated	Ileocecal, 6 inches long	Celiotomy; reduction; appendicectomy	C. Intussusception of appendix itself. Child had been admitted with similar symptoms 3 weeks before, but these had subsided spontaneously and she was discharged.
"	F.	7 months	Not stated	Ileocecal	Celiotomy; reduction	D. within 24 hours. P.M.: Ulceration of colon at site of invagination.
1898	M.	1	24 hours	Enteric and ileocecal	Celiotomy; reduction	D. within 24 hours. P.M. Reduced.
"	M.	6 months	1 day	Ileocecal	Celiotomy; reduction	D. within 24 hours. P.M.: Reduced. No peritonitis.
"	M.	4 months	2 days	Ileocecal	Celiotomy; reduction; incision in midline below umbilicus; *enema et mag. sulph.* immediately after operation	D. within 24 hours.

Cases of Intusussception—*Continued.*

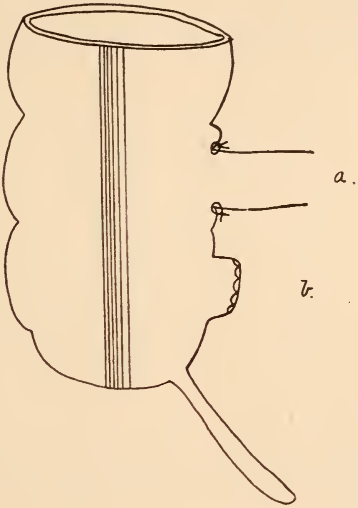
Date.	Sex.	Age.	How long Ill	Variety.	Treatment.	Resnlt—P.M.
1898	M.	5 months	Few hours	Ileocecal	Celiotomy; reduction; *brandy and strychnine* before and after operation.	C.
"	M.	7 months	1 day	Not stated	Manipulation under anesthetic; reduc'd	C.
"	M.	22	14 days	Four enteric intussusceptions	Celiotomy; reduced; incision in midline below umbilicus	D. within 24 hours (2 hours after operation). P.M.: Nothing abnormal found.
"	M.	8 months	Not stated	Ileocecal	Celiotomy; resection; incision through r. rectus; Paul's tubes	D. within 24 hours.
"	M.	3 7-12	Not stated	Multiple enteric	Celiotomy; reduced	D. within 24 hours
"	F.	4 months	1 day	Ileocecal	Celiotomy; reduced incision in midline; brandy; rectal feeding; *Ol. ric. and tr. opii on second day*	D. on 2d day. P.M.: No peritonitis.
1899	M.	5 months	3 days	Ileocecal	Celiotomy; reduced; subcutaneous injections of ether and strychnine; brandy by mouth; tinct. opii	D. on 6th day. P.M. Slight peritonitis.
"	M.	3 months	2 days	Ileocecal	Celiotomy; reduced; incision through 1. semilunar line; *brandy after operation*	C.
"	M.	4½ months	18 hours	Ileocecal	Celiotomy; reduced; incision in mid-line below umbilicus	C.
"	M.	8 months	24 hours	Ileocecal	Celiotomy; reduced; incision through l. rectus; *brandy and saline per rectum*	D. within 24 hours. P.M.: No peritonitis.
"	M.	5 months	7 hours	Double; enteric, and this into cecum	Inflation unsuccessful, then celiotomy and reduction	C.
"	M.	8 months	24 hours	Ileocecal	Celiotomy; reduced	D. within 24 hours. P.M. No peritonitis.
"	M.	10 months	1 day	Ileocecal	Celiotomy; reduced; median line incision; appendicectomy	C.
"	M.	7 months	5 days	Enteric	Resection; lateral anastomosis	D. within 24 hours. P M.: Peritonitis.
"	M.	10 months	1 day	Ileocecal	Celiotomy; reduced; r. semi-lunar line incision	C.
"	M.	6 months	1 day	Ileocecal	Celiotomy; reduced; incision through r. rectus	C.
"	M.	1 10-12 years	1 day	Ileocolic	Celiotomy. reduced	D. within 24 hours from shock. P.M.: Coils of ileum, last 18 inches adherent to one another.
"	F.	7 months	2 days	Ileocecal	Celiotomy; reduced	D. within 24 hours.
"	F.	6 months	3 days	Ileocecal	Celiotomy; reduced; median incision below umbilicus	C.

1899	F.	3 years	2½ hours	"Partly ileocecal, partly ileocolic"	Celiotomy; reduced; median incision below umbilicus	C.
"	F.	2 3-12 years	3 weeks	Chronic ileocecal; 2 inches of intussusception ulcerated through	Celiotomy; resection; (Paul's tubes); *brandy*	D. on 12th day. P.M.: No peritonitis. Sinus thrombosis, non-septic.
"	F.	1 3-12 years	12 hours	Enteric, 4 inches long........	Celiotomy; reduction; incision in midline below umbilicus; *brandy*; rectal feeding	D. on 31st day. P.M.: Bronchiectasis.
"	F.	6 months	1 day	Ileocecal; then this into colon 4 inches long................	Celiotomy; reduction; incision through l. rectus	C.
"	F.	7 months	24 hours	Ileocecal......................	Celiotomy; reduction...................	D. within 24 hours. P.M.: No peritonitis.
1900	F.	8½ years	5 days	Enteric; gangrenous.........	Resection of 22 inches of gut; implantation anastomosis one month later	C.
"	M.	4 months	12 hours	Enteric; 6 inches.............	Celiotomy; reduced.....................	C.
"	M.	1 3-12 years	(?) 1 hour	Ileocecal......................	Celiotomy; reduced.....................	D. under anesthetic. (CHCl3).
"	M.	10 months	Few hours	Ileocecal......................	Celiotomy; reduced; *brandy on admission; Ol. ric. 1 dram third day*	C.
"	M.	3 years	1 day	Enteric, then this into cecum	Celiotomy; reduced; *Ol. ric. 1 dram 3d* day	C.
"	M.	5 months	1 day	Ileocecal......................	Coliotomy; reduced; *brandy per rectum*	D. within 24 hours.
"	M.	10 monfhs	1 day	Enteric and ileocecal....	Celiotomy; reduced.....................	C.
"	M.	7 months	4 days	Enteric........................	Celiotomy; reduced; *subcutaneous infusion of saline*	D. within 24 hours.
"	M.	3 months	12 hours	Ileocecal......................	Celiotomy; reduced.....................	C.
"	M.	23 years	5 days	Enteric........................	Too ill for operation; *saline infusion;* digitalis morphia	D. P.M.: Perforative peritonitis.
"	M.	6 years	1 day	Not stated....................	Celiotomy; no intussusception found; appendicectomy	C.
"	F.	5 mcnths	12 hours	Ileocecal. 4½ inches long.....	Celiotomy; reduction; *brandy on admission; Ol. ric. third day*	C.
"	F.	19 years	1 day	Enteric and ileocecal.........	Resection; lateral anastomosis..........	C. (Paul's tubes. Anastomosis at later date)
"	F.	6 months	24 hours	Ileocecal, 12 inches long......	Celiotomy; reduction; *brandy*..........	D. within 24 hours.
"	F.	6 months	1 hour	Ileocecal......................	Celiotomy; reductiou; appendicectomy	D. on 3d day. P.M.: Obstruction of ileum by kinking 2 feet from valve.
"	F.	8 months	4 days	Ileocecal......................	Celiotomy; reduction; *brandy and strychnine subcutaneously*	C.
"	M.	11 months	4 days	Ileocecal; valve at anus......	Celiotomy; reduction....................	D. within 24 hours.
"	M.	7 montns	1 day	Ileocecal......................	Celiotomy; resection....................	D. on 8th day. Peritonitis.

very gentle and if necessary the ensheathing bowel may be opened and reduction assisted by the introduction of a finger. If this is unsuccessful the irreducible portion may be excised through the aperture, as was done in a case of completely inverted appendix (see figure). Resection *in situ* is more often needed in chronic cases.



In the case of young children, where rapidity is specially necessary, the bowel may be brought outside the abdomen, resected, Paul's tubes inserted, gauze wrapped round and the child got into bed as quickly as possible. The treatment of gangrene was illustrated by the case of a girl, 8 years of age, treated in the beginning of 1900. The child took ill suddenly with pain and sickness; for two days before admission her motions were described by her mother as like coffee grounds. The child was very ill when admitted to hospital and a lump could be felt in the abdomen. On opening the abdomen an intussusception was discovered, black and gangrenous, situated about a foot from the cecum. It was brought out of the abdomen and excised. It was found to be enteric in character and the bowel removed measured 22 inches. Paul's tubes were inserted and the parietal peritoneum united to the bowel at each end. Saline solution was injected into a vein. A week later the child was much better and a month later continuity was re-established by emplanting the small bowel into the ascending colon (see figure). The operation was borne well but was followed by severe and intractable vomiting. The child became shrunken, but after another intravenous injection of saline solution recovery took place rapidly and the patient has remained well since.



To obviate the danger of ventral hernia I recommended the use of buried sutures and of superficial sutures, left in as long as possible. The first are specially necessary in young children.

Death is often preceded by high temperature and delirium coming on rapidly, and with nothing to be found post-mortem to account for death. I have seen nothing similar to this in adults.

I have nothing to add concerning chronic cases; there have been four such cases in adults out of ten, and two in children out of 105. I operated on three cases, one being the case of inverted appendix already mentioned.

Modifications of the Conclusions of 1897.

1. Inflation or injection should be tried only if the case is seen within a very few hours and if the symptoms are not very acute.

2. Inflation may be a useful preliminary by limiting the field of operation.

3. When resection is necessary this may be followed by reunion of the bowel in chronic cases. In acute cases a wide resection may be carried out at once; an operation for the restoration of continuity of the bowel at a later period.

DISCUSSION.

The discussion was continued by Mr. D'Arcy Power, F. R. C. S., who said he thought the objects of the discussion would be best promoted if each speaker gave a survey of cases which had come under his own observation. He had brought with him a table of cases treated at St. Bartholomew's Hospital and at the Victoria Hospital for Children during the years 1891-1900.

Table of Cases of Intussusception Occurring at St. Bartholomew's Hospital and at the Victoria Hospital for Children, Chelsea, during the years 1891–1900.

	Cured.		Died.		Total.		Grand Total.	Total No. of surgical cases.
	M.	F.	M.	F.	M.	F.		
1891—St. Bartholomew's Hospital...	0	0	1	2	1	2	3	3,852
Victoria Hospital..............	1	0	0	0	1	0	1	349
1892—St. Bartholomew's Hospital...	1	1	2	0	3	1	4	3,750
Victoria Hospital......... :....	0	0	1	1	1	1	2	441
1893—St. Bartholomew's Hospital ..	3	2	1	1	4	3	7	4,539
Victoria Hospital..............	0	0	2	0	2	0	2	479
1894—St. Bartholomew's Hospital...	0	0	1	1	1	1	2	4,453
Victoria Hospital..............	0	0	1	0	1	0	1	565
1895—St. Bartholomew's Hospital...	1	0	5	2	6	2	8	4,617
Victoria Hospital..............	0	0	1	1	1	1	2	537
1896—St. Bartholomew's Hospital...	1	0	2	0	3	0	3	4,475
Victoria Hospital..............	0	1	1	0	1	1	2	475
1897—St. Bartholomew's Hospital...	0	1	0	2	0	3	3	4,237
Victoria Hospital..............	1	0	0	1	0	2	2	491
1898—St. Bartholomew's Hospital...	2	0	3	1	5	1	6	4,236
Victoria Hospital..............	1	0	0	0	1	0	1	387
1899—St. Bartholomew's Hospital...	4	1	2	2	6	3	9	4,120
Victoria Hospital..............	0	0	2	0	2	0	2	151
1900—St. Bartholomew's Hospital...	2	0	3	0	5	0	5	3,754
Victoria Hospital..............	0	0	0	0	0	0	0	289
	17	6	28	14	44	21	65	46,197

Total recoveries, 23.
Total deaths, 42.
Thirty cases presented points of special interest, as follows:
Two recovered spontaneously, one acute and one chronic case.
One recovered from a triple intussusception.
One died of ileus after reduction.
One had intestinal obstruction due to adhesions after the abdominal section.
Two cases were too ill to operate upon.
One case had such extensive adhesions that nothing could be done.
Three cases recurred repeatedly after apparent reduction by irrigation.
In three cases the intussusception was overlooked at the operation and was found post-mortem.
In one case there was no intussusception.
Fifteen cases needed excision of the bowel; in—
Seven cases an artificial anus was made; all fatal.
Five cases Murphy's button was used; four died and one recovered.
Two cases Maunsell's operation was performed; both died.
One case a circular enterorrhaphy was done: it died.

The tables indicated comparative rarity of the condition in London, there being only sixty-five cases in ten years out of a total of 46,197 surgical cases. Thirty of the cases presented points of special interest. Two cases had recovered spontaneously, one acute and one chronic case. The latter was possibly susceptible of a different interpretation, for he had performed abdominal section in one case and found no intussusception, and there were three cases in which intussusception was overlooked and discovered post-mortem.

A schoolboy, aged 12, recovered after an abdominal section which revealed three intussusceptions. The boy had suffered from symptoms for four days.

Fifteen cases out of the total sixty-five had required resection of a portion of bowel and of these only one had recovered. This case was operated on by Mr. Pick. Murphy's button was used and was passed on the ninth day.

The speaker advocated immediate operation in all cases at the earliest possible moment. He thought, however, that irrigation might be used to reduce the suffering of the patient until preparations could be made for operation, and also to reduce the size of the tumors.

Mr. Macadam Eccles, F.R.C.S., said that the experience at St. Bartholomew's bore out Mr. Pitt's conclusions, that the number of cases admitted to the hospital was largely on the increase in recent years.

There was no doubt that early diagnosis was the key to successful treatment. Given this, operation should be performed without delay if the surroundings were satisfactory as in hospital. This meant less shock, less distention of the abdomen, less danger of septic infection.

Mr. Pitts had spoken of high temperatures after operation. The temperature might be—

1. Very high very soon after operation.
2. Very low.
3. Normal.

In 3 the case is recovering; in 2 there is shock; in 1 he believed the fever was due to absorption of toxic products from the portion of bowel which had been reduced. We see the same in herniectomy for strangulated hernia. He recommended washing the intestine in a 1 in 2000 solution of biniodide of mercury before returning it to the abdomen.

If manipulation and irrigation are to be tried chloroform should first be administered and everything ought to be ready for operation in case the irrigation was unsuccessful.

He did not believe in buried sutures. It is better to place sutures through the abdominal wall, close together, and to leave them in for a fortnight. He used silkworm gut. The abdominal wall was very likely to be distended afterwards; therefore the stitches should be close together.

The after-treatment was very important: (1) as a *food.* The child should not suck for twenty-four hours after operation, as sucking increased peristalsis. It was better to draw off the mother's milk and give it to the child with a spoon. (2) as to *shock.* Injection into the rectum immediately after operation of 2 ounces of milk at a temperature of 105° F. he considered advantageous. (3) A small dose of opium after operation was useful in keeping the bowel quiet. (4) Recurrence in future years was possible. In a case recently recorded there was a recurrence six years after operation.

Mr. Tubby said that his cases had been of great severity and the appearances indicated the futility of injections. Even if one saw the case within a few hours, abdominal section was the best treatment because one cannot be sure of the completeness or permanence of reduction.

He had twice seen commencing thrombosis of the mesenteric veins and possibly such a condition might give a clue to the implantation of the cases of high temperature alluded to by Mr. Pitts.

Mr. Abbott thought the cause of high temperature after operation was probably absorption from the inner surface of the bowel and that this obviously could not be prevented by washing the outside, as had been recommended.

The diagnosis was usually easy as there was hardly any other condition which gave the same group of symptoms—sudden pain, vomiting, the passage of blood and slime and a tumor in the abdomen, but he had recently seen a case with all these symptoms, when at the operation there was found to be tubercular peritonitis with an enlarged gland pressing on and obstructing the bowel. No one could have diagnosed such a case.

He quoted a case of local peritonitis and gangrene, where he opened the abscess, resected the bowel and the child died. He thought he should have waited before resecting the bowel.

He had seen three cases where the intestines had escaped from the abdomen after operation. In all these the sutures had been right through the abdominal wall, and in two cases had been taken out too soon by the house surgeon. He thought a few deep sutures should be inserted and would prevent eversion of the peritoneal edge.

He thought Mr. Pitt's suggestion, to open the bowel useful as it would obviate the risk of rupture. It would be better to make a clear incision than run this risk.

Mr. Paul Bush also emphasized the necessity of early operation. He believed many cases were lost solely through irrigation or inflation. This was not so detrimental if used only to reduce as much as could be reversed, but there was a danger of kinking; complete reduction might have occurred when the swelling disappeared under the fingers, while it might only be partial and the symptoms would recur, operation eventually being performed at a disadvantage.

He thought one should not wash out the peritoneum if it could be avoided, as he thought this might interfere with the normal power of dealing with septic matter; the less washing and irrigating the better.

In cases of resection he believed in operating in two stages—draining the intestine with a Paul's tube and finishing the operation on a subsequent occasion.

Mr. Sinclair White said that he had had three cases of hyperpyrexia. In the first, reduction was easily effected but the child died within twenty-four hours. The second case died before operation could be performed. The temperature was 108° F. In the third case reduction was completely effected (as proved by the post-mortem) by hydraulic pressure; after this a high temperature developed, probably from some trophic condition, as it came on too rapidly to be due to septic infection.

He thought inflation or irrigation should not be discouraged where the practitioner is far from skilled assistance—a dose of morphia might prevent recurrence.

Mr. Pitts had advised emptying the bowel by an incision in the distended portion. He thought it better to bring the bowel out of the abdomen and protect by towels and thus one could get at the disease without incising the bowel.

Dr. Marshall said that one gentleman had raised the objection to immediate operation, that we are not all experts, but he thought that ought not to influence the meeting in declaring its opinion of what was right.

As to some points of detail mentioned, he said he had never used deep sutures for the abdominal wound, but the remarks of one speaker had suggested that they had at least this advantage, that they could not be interfered with by an over-zealous house surgeon.

He was sorry strychnine had not been mentioned in connection with the treatment of shock, and cited a case where he believed it had been of value in promoting recovery.

Dr. Mansel Sympson agreed with the previous speaker, that the less fiddling before the operation the better. Still, he had a case where the intussusception protruded from the anus and complete recovery had been maintained after treatment by injection, now four years old.

Professor McPhedran, Toronto, also spoke briefly emphasizing the necessity for early operation. He said the first difficulty was early diagnosis, and the second, that if the case was diagnosed early one was apt to be tempted to try other means of treatment and so delay operative interference.

Dr. Blackader (Canada) said we should avoid giving purgatives in children when the bowels fail to act and there is a tendency to vomiting. Enemata should be used, and if these do not give a satisfactory result a surgeon should be associated with the case early.

Mr. Frederick Eve (President) said the discussion had fully justified the choice of the subject. There was a practically unanimous opinion in favor of immediate operation. This was a most important resolution to go forth to the practitioners of this country.

If a child is first anesthetized and treated by injection and then later subjected to a second operation by laparotomy death almost always occurred.

Recurrence of the condition after injection was mentioned but these were not really cases of recurrence. The reduction had never been completely effected. Injection and inflation were haphazard methods of treatment, because in 38 per cent. of cases the intussusception begins in the small intestine, and as a rule in children the ileocecal valve is competent and will prevent water passing up with the ileum.

He had seen a form of intussusception which is not rare, but which is not described in the text-books, where the invagination begins at the apex of the cecum. He had seen six cases of this kind out of twenty-one cases operated on. The apex of the invaginated portion becomes thickened by edema and complete reduction is often difficult.

Mr. Bernard Pitts, in reply, said there could be little diversity of opinion as to the value of the tables brought forward by Mr. Power and himself in assisting the discussion.

Mr. Eccles has made some remarks on the causation of hyperpyrexia, but he thought that although some cases might be toxemic others were not. The rise of temperature came on at once and was associated with changes of impending death.

Mr. Bush had rather objected to washing out the peritoneum, but he thought that if there was infection of the peritoneum that membrane would be able to perform its functions much better after being washed. Where perforation had occurred there was no record of recovery having ever taken place without the peritoneum being washed out.

He criticized some of Mr. White's remarks. He thought injection should only be tried if the case was seen at once.

This was the opportunity of the general practitioner who did not go prepared to operate, but he ought to come back very shortly prepared to arrange for immediate operation if the symptoms have not been entirely relieved.

As to letting the intestines escape from the abdomen into a towel, that was only too easy. The difficulty was to get them back again if they were not emptied. In one case he had opened the bowel in three or four places to ensure thorough evacuation and the patient made a good recovery.

Opium might be desirable in some cases after operation but certainly not after treatment by injection, as it would certainly mark the occurrence of the symptoms for which we were bound to look out.

PAPERS.

Mr. Tubby read a paper on **The Transplantation of Tendons.** The discussion was deferred on account of the lateness of the hour.

Second Day's Proceedings.

Discussion on the **Early Diagnosis** of the **Acute Specific Fevers** opened by Dr. F. Foord Caiger.

Mr. Caiger, in opening the discussion said that early diagnosis was more necessary in this than in any other class of diseases, not only on account of the patient's welfare but for the safety of the general public. This is especially true of measles, diphtheria, whooping cough and mumps, because of their infectivity at an early stage or the disease.

It seems advisable for the purpose of discussing these early diagnoses to provisionally classify the specific fevers and certain affections which are liable to be mistaken for them into various groups, on the basis of a recognized similarity in their clinical aspect during the early period of illness.

1. Let us first take a group of affections in which the source of confusion consists in the possession, at an early stage of the attack, of catarrh of the naso-respiratory tract and more or less pyrexia, viz.: measles, rubella, ordinary cold and whooping cough. The fact that measles and rubella have a rash is a well-marked point of distinction from the other two, and the existence of a pre-eruptive stage of two or three days duration is of undoubted value; the measles rash usually comes out during the third night of definite illness, but an ill-defined blotchiness of the face and suffusion of the eyes may often be seen at an earlier period. In post-scarlatinal measles a shortening of the pre-eruptive period is liable to occur; indeed, is more likely to occur than otherwise. In a series of 78 post-scarlatinal cases under observation, in 27 the rash appeared

on the first day, in 34 on the second, in 13 on the third and in only four on the fourth. Many of these cases were very severe, the mortality being 14 per cent.

In rubella the rash is usually present before any other sign, but tender enlargement of the posterior cervical glands is not uncommon several days before the rash appears. In some cases the rash may be very slight, and such may not come under medical observation, but he considered simply ordinary cases of stiff neck, the result of a draught. The catarrhal symptoms in rubella are but slight, being commonly limited to a little injection of the conjunctival and faucial mucosa. The patient may be conscious of a "stuffiness in the head," but there is nothing approaching the catarrh of measles.

When the rash comes out the patient usually feels distinctly better, which is in marked contrast to measles, in which a decided aggravation of the symptoms accompanies the development of the rash. The pyrexia, too, is slight and transient.

The rash is strikingly similar in measles and rubella. In rubella the spots are usually smaller and pinker than in measles and in the early stage the rash is less patchy and irregular in distribution. The spots tend to remain discrete and as long as they remain raised above the surface show less tendency to collect into groups. On the other hand, in many cases in from twelve to twenty-four hours the spots tend to lose their raised appearance and to become fused into a diffuse red flush or blotching, occasionally distinctly punctuated. The rash is less resistant than in measles and does not leave any blotches.

Koplik's spots have attracted a great deal of attention of recent years. These were described by Koplik in the *Archives of Pediatrics* in 1896, but had been forestalled by Filatow in 1895. The spots may be described as minute white specks on the buccal and labial mucosa, visible on careful inspection from one to three, rarely even five days before the appearance of the rash. They number from three or four to several dozens and are often in clusters. They are more particularly found on the buccal mucous membrane near the molar teeth and on the inner surface of the lips; sometimes on the gums, but not on the palate; at an early stage they are very minute and are easily overlooked. According to Koplik they have a bluish-white appearance which, it must be admitted, is not very apparent.

There can be no question as to the great value of the spots as a factor in diagnosis, not only in the early recognition of measles, but also in its differentiation from other affections which are liable to be mistaken for it, especially rubella, laryngeal diphtheria, catarrhal laryngitis and the morbilliform erythema following the injection of antitoxin.

The spots occur with remarkable constancy. Mr. Falkener collected a series of 431 cases examined by several different observers. For the aggregate of 431, 11 cases were deducted comprising 7 in which the spots had not been carefully looked for and 4 in which the patients were at the time marantic, leaving 420 cases, and in these Koplik's spots were stated to be present in 409, that is, in 97.6 per cent. My own experience has not been quite so favorable as this.

To a careful observer the only other appearance which is at all likely to be mistaken for Koplik's spots are certain white specks which are sometimes to be seen rather far back in the buccal surface of the cheek; they are yellowish in tint and apparently of congenital origin.

The differentiation of an ordinary febrile cold from measles in the prodromal stage is often difficult. The pyrexia is usually less continued, but in measles there may be a temporary abatement in the pre eruptive stage. Lachymation may be present but photophobia is probably absent. Koplik's spots will be absent and so will that subcuticular blotching of the face which is often observed in measles before the rash appears.

As is well known whooping cough at the commencement of the attack is very likely to be mistaken for an ordinary bronchial cold, and in the absence of the characteristic whoop its recognition may be considerably delayed. In some undoubted attacks the whoop is absent throughout. Points which serve to indicate the specific character of the cough in the absence of the whoop are the relative frequency with which the cough occurs at night, the sudden onset, the paroxysmal quality and peculiarly energetic character; the points of diagnostic nalue are the puffiness around the eyes, subconjunctival edema, excessive vicidity of the sputum and the existence of fine, sticky rales over the chest. Psychic disturbances are also common. The child is unduly nervous and is prone to wet his bed.

Koplik, confirming the observation of Afanassief, Szemetzchenko, and Zuch, describes a small bacillus in the sputum during the early stage. He isolated it from the grayish mucus pellets of the sputum in thirteen out of sixteen consecutive cases. It is very minute, is difficult to cultivate, but may be grown on coagulated hydrocele fluid.

2. Let us now consider the diagnosis of affections attended with laryngeal stridor or croup. This may be spasmodic, catarrhal, or membranous. Purely spasmodic croup is rare except in infants and is usually associated with rickets. Some reflex cause can usually be discovered. Between simple inflammatory croup and membranous laryngitis or diphtheria the diagnosis is often very difficult. A history of exposure to cold in the one case or exposure to infection in the other is of value as far as it goes, but such evidence is apt to be only misleading.

The certain differentiation between simple inflammatory croup and early laryngeal diphtheria in the absence of faucial exudation may be impossible without bacteriological examination, but should there be visible even a speck of definite exudation on the tonsils or rhinrrhea without other evidence of catarrh, the case will almost certainly prove to be one of diphtheria. In every case of doubt a sterilized swab shoud be passed into the upper part of the larynx and the secretion examined forthwith for bacilli.

3. We have now to consider those affections which are attended with a febrile sore throat, viz., diphtheria, tonsillitis and scarlet fever. In an early stage it is often extremely difficult to distinguish diphtheria from a simple tonsillitis and the diagnosis must then rest on bacteriological examination; lack of time precludes me from attempting to discuss the bacteriological diagnosis, but I venture to submit the following propositions:

1. When bacilli conforming to the Klebs-Loeffler bacillus are found in a case in which the clinical aspect is negative the bacteriological examination cannot be considered conclusive unless it includes the result of animal inoculation.

2. When bacilli are found as above and the clinical appearances are consistent with a diagnosis of diphtheria the bacteriological evidence may be held to establish the diagnosis.

3. Failure to detect the Klebs-Loeffler bacillus in a case which from the clinical standpoint is negative is sufficient to exclude a diagnosis of diphtheria, provided a second examination, preferably on the following day, is unsuccessful.

4. On the other hand, failure to detect the bacillus cannot be held to exclude diphtheria should the clinical evidence be distinctly suggestive of that disease.

Incidentally, I desire to attest the value of Neisser's stain in determining the specific nature of a doubtful bacillus.

From the clinical aspect alone it is often impossible to distinguish a case of follicular tonsillitis from one of diphtheria, particularly at an early stage. In tonsillitis the exudation when present consists of small spots or patches which rarely coalesce so as to form a continuous pellicle. In diphtheria, on the other hand, the exudation, even if it begins at the mouths of the tonsillar crypts, soon coalesces into patches of varying size. In tonsillitis also the exudation is usually limited to the tonsils. The affection, moreover, as a rule, is equally pronounced on both sides; albuminuria, too, is uncommon and the gland swelling relatively slight, but the fever and constitutional disturbance are apt to be more severe than in a case of diphtheria, sufficiently mild to be mistaken for it.

In scarlet fever, sore throat is usually present from the outset and its special characteristic might be defined as a vivid red injection of the whole of the faucial mucous membrane. The degree of tonsillar swelling varies; in about four-fifths of the attacks the sore throat is attended by vomiting and before many hours the rash comes out. In tonsillitis an erythematous flush is occasionally seen on the trunk and arms, but it is never punctiform and rarely persists more than twenty-four hours. Vomiting, also, and the characteristic strawberry tongue are absent.

4. I can hardly conclude without referring to the differentiation of those fevers which have a diffused erythematous eruption, viz., scarlet fever, measles and rubella. The early indications of measles I have already considered. The distinction between a mild scarlet fever and rubella is apt to be difficult. In each case the rash is present at the commencement of the attack and usually some degree of redness of the fauces. The main points of distinction are as follows: The period of incubation is in scarlet fever two or three days, in rubella ten to fourteen or even more. Vomiting is common in scarlet fever, in rubella, rare. Suffusion of the eyes occurs in scarlet fever only as part of the flushing of the face, in rubella as an independent affection. Faucial inflammation is usually marked in scarlet fever, slight in rubella. The rash in scarlet fever is erythematous and punctiform. In rubella at an early period it is morbilliform and only later does it become diffused or blotchy. The face in scarlet fever is simply flushed, the circumoral region being pale and uninvaded; in rubella the rash is spotted on the face and usually invades the circumoral region. Some tender fulness of the submaxillary glands is usually present in scarlet fever, but there is no such marked involvement of the concatenate chain as in rubella.

Some cases of German measles seem to conform more to the scarlet fever, and some tc the measles type. As an explanation of this well known fact Dr. Clement Dukes has put forward the view that under the term rubella are included two distinct diseases. He retains the term rubella for those which resemble measles while those attacks which conform to the scarlatinal type he provisionally designates "the fourth disease," to distinguish it from measles, scarlet fever and rubella. The evidence in support of his views he sets forth in the *Lancet* for July 14, 1900, but the question is still *sub judice*.

Dr. GOODALL (Carmarthen) said he could confirm Dr. Caiger's statement that in measles the rash came out more often by the second day or even on the first day than was commonly supposed. He would refer briefly to a few points:

Prodromal rashes had not been mentioned. In measles such a rash might be present and might be very brilliant and closely resemble a scarlatinal rash, but it is not punctate.

The scarlatinal rash is not always punctate during the first few hours and this may cause a difficulty in diagnosis, especially if the catarrhal symptoms are not inquired into. It is not rare for cases of measles to be sent to tho hospital with a diagnosis of scarlet fever.

In varicella a scarlatiniform rash may be seen, but is not prodromal, as it appears after the varicella eruption. It also is often mistaken for scarlet fever.

Is there such an eruption in pneumonia? Cases of pneumonia are not uncommonly sent to the hospital with a diagnosis of scarlet fever.

Koplik's spots.—He agreed with Mr. Caiger that these are not always present. He had recently had an outburst of measles in one ward, and in one case there were no spots whatever.

Laryngeal stridor.—On this subject he had nothing to add to Dr. Caiger's remarks. He thought if laryngeal stridor were present and the cause was not obvious the case should be treated as diphtheria.

Febrile sore throat.—He desired to emphasize the importance of always examining the throat in a sick child. One might actually find a well developed diphtheritic exudation in a child going about. It is often difficult to diagnose scarlet fever before the rash appears. He was surprised that Dr. Caiger had said that sore throat was present from the outset; in many cases, as he thought, there was never any sore throat at all. There may even be no morbid appearances in the throat. Sometimes the diagnosis cannot be made straight away and one has to wait for peeling, etc.

The length of the incubation period when it can be made out is of value.

Diphtheria and scarlet fever.—The rash of scarlet fever may come out much later than usual, e.g., after four or five days and this especially in bad cases. If the onset is sudden, with high temperature and vomiting and no benefit is got from antitoxin we should look out for the scarlatinal rash.

The bacteriological examination is not always helpful. The patient may have both diseases and in a hospital one wishes to know which ward the patient must be sent to.

Dr. Henry Ashby (Manchester) said no more interesting subject could have been chosen for discussisn. He thought one was apt too make too much of individual symptoms. The diagnosis must depend on the *tout ensemble* of the disease. This especially struck him with regard to Koplik's spots. He did not think he found these in such a large proportion of cases as in the figures quoted by Dr. Caiger. He thought in out-patient experience if one were on the outlook for the spots one would be very ready to count all sorts of spots as Koplik's.

He asked what Dr. Caiger's experience was as to symptoms during the incubation period of measles. He thought there was often a little temporary kick-up of temperature before the tenth day of incubation.

Had Dr. Caiger noticed that after influenza children might have a spasmodic cough of the energetic character described? Possibly the toxins of whooping cough and influenza had in this respect a similar action. It may be almost impossible to say certainly that such a cough is not whooping cough but it may not spread where it certainly would have done so if whooping cough.

He had seen cases where the sequelæ of diphtheria and of scarlet fever had followed glandular enlargement at the angle of the jaw. The cases suggested that the scarlatinal or diphtheritic process might be going on there instead of in the adenoid tissue of the fauces.

Pneumonia.—He used to have a good many cases sent into the hospital where there was a scarlatinal fever, which turned out, after admission, to be cases of pneumonia. The physical signs developed slowly and were often atypical in site.

Is there a "fourth disease"? He had seen cases which made him think there was. Some years ago he had a number of cases sent in as scarlet fever, with a red rash, etc., which took regular scarlet fever soon afterwards, He thought there was a form or rubella which imitates scarlet fever as varicella imitates smallpox.

Dr. Poynton said he would only refer to the question of "the fourth disease," raised last year by Dr. Dukes. He described a number of cases he had seen in a school where he was at a loss to make a diagnosis. Cases occurred at intervals through the year. The cases were isolated and after three weeks were allowed to mix with the others although peeling, as Dr. Dukes described. In no one case did the disease seem to spread, but one boy had arthritis and one albuminuria. Later in the year there was an epidemic of rubella in the school.

Dr. Watson Williams also narrated cases seen during an epidemic of rubella to show how gradations might be found between measles on the one hand and scarlet fever on the other.

Dr. Lovell Drage said that every case of sore throat should be looked on as a possible case of diphtheria. Bacteriology in place of helping the practitioner had rather puzzled him. He thought if an epidemic of infectious sore throat arose in a school, every case of sore throat, however slight, should be isolated, and that antiseptic mouth washes should be used by everyone. It was a mistake to isolate only those who really seemed ill. In all the infectious diseases the mild merged into the severe forms.

He instances the suppression of plague in Glasgow last year as an enample of what might be done by vigorous methods of isolation, although perhaps all that was done then was not applicable in dealing with the diseases of common life.

He thought the old term "gastric fever" a good one. One meets with many cases in practice which begin like typhoid fever but abort at the end of one or sometimes two weeks.

Dr. Sympson said that in an epidemic one attached great importance to the enlargement of lymphatic glands, spoken of by others as characteristic of rubella. The position of the rash was important, being more behind the ears and around the nose and mouth, and less around the scalp than in measles.

In scarlet fever he thought the circumoral pallor and the great heat of the skin important points. This great heat to the touch was found especially in three diseases—in scarlet fever, in acute pneumonia in children and in a disease less common in children—acute rheumatism.

He narrated some cases of acute specific fever ushered in by convulsions.

Dr. Caiger, in replying, said that one speaker had referred to surgical scarlet fever and rashes in surgical cases. These were of two varieties:

1. A diffuse erythema occurring in a child in the surgical wards, often where there is no focus of infection. These are slmply cases of scarlet fever and we always treat them as such.

2. Septicemic eruptions resulting from absorption. These occur chiefly through an ulcerated throat. The rash is rather morbilliform than scarlatiniform. It is often almost indistinguishable from measles, but its distribution is different; no Koplik's spots are present and there are no catarrhal symptoms.

Dr. Goodall had expressed suprise that he had not mentioned prodromal rashes. He quite recognized the importance of these although he had not found room to refer to them in his paper.

Thr cases of scarlatinal sore throat with late development of the rash he was inclined to consider cases of a severe simple or septic sore throat with secondary infection by scarlet fever.

Dr. Ashby had asked about symptoms during the inoculation period of measles. He recognized that one occasionally got a rise of temperature in this period with slight indisposition, but he knew of no recognized symptoms during the incubation period. He had had very little experience with influenza in children and could not answer Dr. Ashby as to spasmodic cough in that condition.

As to the so-called "fourth disease," where he thought Dr. Duke had failed was in not finding these cases in children who had had scarlet fever. Nor could Dr. Duke give the duration of the incubation period. This considerably weakened the force of his conclusions.

PAPERS.

Dr. Herringham read a paper on **General Edema without Albuminuria in Children.**

Dr. F. L. Batten said that general edema in children without albuminuria was a well recognized condition. It was seen in marasmic infants, in congenital syphilis, in the later stages of tuberculosis, in association with excisions, diarrhea and anemic conditions, but apart from such conditions there was a group of cases of quite different course and pathology. As an illustration he quoted the case of a boy, P. G., aged 4 years, who had an attack of dropsy similar to his present attack a year previously, He was ill for a month and then recovered. His present attack had came on a week before with swelling of legs, face and abdomen. He had never had scarlet fever, and was a well-nourished boy. The eyes were puffy, the abdomen edematous with free fluid in it, and there was edema of the lips. The heart was normal, and there was no albumin in the urine nor any sugar. The average quantity of urine in twenty-four hours was 10 oz, and specific gravity always high—1028 to 1035. The edema rapidly diminished and the boy left rhe hospital well in fourteen days. This he considered a typical case of what Dr. Herrigham had called toxemic dropsy.

He quoted also a case occurring in an infant of fourteen months. The child died of convulsions. At the autopsy the kidneys were found to be very small. weighing only ½ ounce each, but they were normal in structure (the kidneys of another infant of 9 months weighed 1 ounce).

Dr. Batten said that the cases he had himself seen would lead him to classify them into three groups, viz.: (1) Those due to extreme debility. (2) Those due to renal insufficiency, as in the case of the baby narrated above. (3) Those of unknown origin described by Herringham under the term toxemic dropsy.

There were no other remarks on Dr. Herringham's paper.

Following the paper read the previous day by Mr. Tubby, Dr. Sinclair Waite read his paper on **The Ultimate Results of Tendon Implantation.**

(To be published later in this Journal).

Dr. Abbott said that he had been well pleased with the results in the few cases he had operated on. He had operated in the absence of paralysis on a soldier returned from South Africa in whom there was rupture of the tendon of the extensor secundi internodii pollicis. The tendon was contracted and shriveled and the ends could not be brought together. Accordingly he made use of the tendon of the extensor carpi radialis brevior and the result had been excellent.

He placed great stress on the use of massage after operation.

Mr. Tubby remarked that some of Mr. White's cases were congenital. He did not think very good results could be expected in such cases and he was doubtful if they ought to be tackled. He also thought the tibialis posticus should not be displaced, as it was a supporter of the arch of the foot. The tendon of the long flexor was preferable, as the short flexors of the toes were quite efficient.

Mr. Abbott read a paper on **A Case of Intrauterine Rickets** with a specimen.

(To be published later in this Journal).

Dr. Ashby said that he did not know of any actual examinations which proved the existence of intrauterine rickets. Dr. Abbott's case was most interesting. There was certainly some bone disease at the time of birth which had caused softening of the bones and there was certainly rickets at the time of death, but as this took place at 14 months there had been time for rickets to develop.

Cases of supposed fetal rickets hitherto examined had turned out to be achondroplasia or some such condition.

That other causes of bone softening might lead to similar deformities was shown by recent experiments on puppies, which were fed on meat and water. These suffered from apparently rachitic deformities, but on the bones being examined a condition of osteoporosis was discovered.

Mr. Eve remarked that in the Museum of the Royal College of Surgeons there was a specimen of osteoporosis from a very young child.

This ended the second day's discussions.

Third Day's Proceedings.

Mr. Eve, President, in the Chair.

The proceedings were opened by Mr. Harold J. Stiles, M.B., etc., who read a paper on **The Radical Cure of Inguinal Hernia in Infants and Young Children.** (This paper will be published later in this Journal).

Mr. Macadam Eccles said we were much indebted to Mr. Stiles for such a practical paper, the outcome of practical experience. He would refer to a few points in the paper.

Cause.—Mr. Stiles had said that the essential cause was the patent process of peritoneum; he objected to the term essential. The patency of the peritoneal process was extremely common at birth, while hernia was much less common. One must therefore look for the cause elsewhere, and he would lay great stress on such conditions as bad feeding and chronic pulmonary disease or whooping cough. Phimosis had been fully discussed two years ago at the meeting at Portsmouth.

Treatment.—He understood Mr. Stiles to say that in 83 per cent. of his cases the onset of the hernia was during the first year but that it was not advisable, as a rule, to operate in the first year. If so, he quite agreed with him. But he did not think that one should do nothing during the first year. If one was left alone the hernia would steadily increase in size and he strongly advocated the use of a well-fitting truss—not the wool truss. He said that if this were done many cases would be cured and the remainder would be in a better position for operation. If the hernia could be kept from coming down there was a natural tendency to closure of the funicular process.

Strangulation.—This, he believed, did occur, but was a different sondition from that met with in adults. In most cases suspension and a little waiting would permit of a reduction.

Operation.—If the deficiency does not close up during the first year it is little likely to close spontaneously. In operating he thought the less done the better. The opening tends to contract if one can only keep the hernia up.

Everything must be done to prevent suppuration. Here a great deal depends on the nurse. If suppuration does occur the intestine may adhere to the scar and this may be the cause of the obstruction of the bowel sometimes met with.

He always used very fine silk for ligature.

In the case of cecal hernia he always removed the appendix. He always opened the sac; sometimes a thin piece of omentum was present which could not be noticed if the sac were not opened.

He had met with tubercular peritonitis in several cases and thought one noticed it more often than formerly. All the cases had done well.

As to the treatment of the wound, he always used collodion. Diet was of great importance; it was often well to keep the child in the hospital for a week or more before operating. He never kept his cases in bed for more than ten days after operation. He thought if a child were kept long in bed there was wasting of muscle; this increased the liability to recurrence.

Finally he said he considered the operation a highly satisfactory one if no complications were present.

Mr. Cuthbert said the great difficulty was to know what to do if one did not operate. The wool truss was unsatisfactory and the rubber truss was little better. He advised putting a bandage on the child and keeping it in bed for a few days before operation to get it used to wearing a dressing.

Dr. Sympson said that he would only remark that in a case in a child under one year if phimosis were present he always performed circumcision at once and operated on the hernia subsequently if necessary.

Dr. Ferguson (Chicago) said he recommended the use of a truss when it could be worn. He operated when the child began to walk.

He said he believed the origin of the internal oblique played an important part in etiology. In females the internal oblique rises from the outer two-thirds of Poupart's ligament, and hernia is rare. In the male the muscle rises only from the outer third, and in cases where hernia is present the origin of the muscle is often even more deficient.

In operating he endeavored to overcome this deficiency by detaching the lower fibres of the internal oblique from their origin, bringing them down in front of the internal ring and giving them a new attachment to Poupart's ligament. This gives the muscle the same origin as in the female.

So far as known the results had been entirely satisfactory, but he had not been able to ascertain the after-history of all his hospital cases.

Mr. Eve congratulated Mr. Stiles on his paper and said he had not expected that he would have had such a large amount of material to bring before them. Mr. Stiles's paper would have a great influence with those who were hesitating as to operating on young children. He was quite in agreement with Mr. Stiles on all the important questions he had referred to.

Mr. Stiles, in reply, said he was glad that those who had spoken agreed with him to such an extent. He quite agreed with Mr. Eccles as to the importancc of the factors he had mentioned in conversation, and he would be glad to use a truss more if he could find a satisfactory one, but that was the difficulty. He could not get such good trusses as Mr. Eccles had spoken of.

With regard to the use of silk, it had the disadvantage that it caused much trouble if suppuration unfortunately should occur. He always used catgut sterilized by superheated steam.

As to opening the sac, it was only in exceptional cases that he did not do so, but there were such cases.

He did not touch his wounds with antiseptics. and since he had used a purely aseptic method of operating his temperature charts had been better.

Mr. Eccles said that he would like to add that it was very desirable that in cases that died after an operation for hernia had been performed a careful dissection should be made to ascertain what had occurred and especially as to the union of muscle with tendon, as spoken of by Dr. Ferguson.

Dr. William Ewart and Dr. W. Lee Dickinson on **Two Cases of Chronic Hydrocephalus in Infants Treated by Tapping and by the Introduction of Aseptic Air in Place of the Fluid.**

(To be published later in this Journal).

Dr. Pritchard asked whether it might not be advantageous to use nitrogen instead of air, as it would probably be less readily absorbed.

Mr. Eccles said the treatment of chronic hydrocephalus was so unsatisfactory that one felt that almost any method of treatment which could be thought of ought to be tried.

During the past year he had three cases of the disease. One of these he treated by Watson-Cheyne's method of introducing a horse-hair drain between the ventricle and the subdural space. There were no adverse symptoms after the operation, The head steadily diminished in size and the child left the hospital only a few days ago with the bones overlapping. The operation was performed in February.

Mr. Stiles said that he had had two cases. In one of these, a child under six months, the child improved after the operation, as described by Mr. Eccles, but six months later was brought back to the hospital as bad as ever and died shortly afterwards.

In the other case the result of the operation was not satisfactory. He was glad to hear that Mr. Eccles had had apparently a satisfactory result.

Dr. Ewart, in reply, said that doubtless nitrogen might be used instead of air, but the air had been absorbed only at a slow rate.

Dr. F. C. Batten read a paper on **Suppurative Pericarditis in Children**, and a paper by

Dr. G. F. Still, on the same subject was taken as read. (To follow).

Dr. Sympson read a short paper on a case of **Suprapubic Lithotomy** in a child, a boy 7 years of age, and showed the stone.

In answer to a question he said that at the time of the operation he could only introduce about 1½ drachms of fluid into the bladder before the stone was removed.

Dr. Eric Pritchard read a paper on **Overfeeding in Children.** (To follow).

Dr. Harry Campbell said, one very important point which was not sufficiently recognized was that children were largely fed on pap. This resulted first in children having too little mastication, and secondly, in their receiving too much nourishment. We should strive to get back to a more natural dietary.

Dr. F. A. G. Foster exhibited clinical cases, including a case of **Pseudohypertrophic Paralysis** in a boy and a case of pneumonia in a child. In the latter the temperature had risen to 106.5° F., and he attributed recovery to the use of oxygen inhalations from start to finish.

Dr. A. H. Bampton contributed a communication on **Mumps Associated with Endocarditis.** (To follow).

This concluded the proceedings of this Section.

We learn that the administration of the College of Physicians and Surgeons, College of Medicine of the University of Illinois, Chicago, has suffered no serious disturbance in consequence of a fire which destroyed the old college building June 25, 1901. It is said to be better equipped for work than before.

A despatch to the London *Chronicle* from Vienna states on the authority of a telegram from Athens that the grave of Hippocrates was discovered during excavations at Larissa. A royal commission was immediately sent to verify the report.—*Atlanta Journal-Record.*

EDITORIAL COMMENTS

The Current Number We consider ourselves fortunate in being able to present to our readers so complete a report of the proceedings of the Section on Diseases of Children of the British Medical Association. Such papers as are not abstracted at length in the report we hope to publish in their entirety at an early date.

The discussion on the treatment of intussusception is of especial interest, and the table compiled by Mr. Pitts and that by Mr. D'Arcy Power from cases occurring in the hospital service of each form a valuable and permanent contribution to the literature of this subject. The conclusions arrived at are confirmatory of the correctness of the conclusion towards which all who have given the subject due consideration are tending. Intussusception is a surgical affection from the beginning; medical measures—inflation, injection and the like—are often efficatious when used early, but while they are being tried preparations should be under way for immediate operation in the event of their proving unsuccessful. T.

"Some Remarks on Tetanus" A paper of this title by Dr. Fielding L. Taylor, Chief of Clinic in the out-patient department of the Hudson Street Emergency Hospital, appeared in the *New York Medical Journal* for July 20, 1901. The paper, containing along with other valuable and important material an account of a series of prophylactic inoculations for tetanus (the first to be reported in this country we believe) merits a rather extended notice.

The writer first refers at length to five cases of lockjaw occurring during 1899–1900 in his own service. Four of these were due to wounds from the wad of a toy pistol; the fifth came from a firecracker. The four cases first mentioned were in school boys; the fifth patient was a man of 53 years. All but the last received large doses of tetanus antitoxin, but not until after the appearance of symptoms. All died.

Four of these cases occurred in 1889, on or about the Fourth of July. Disappointed at the ill results of curative injections Dr. Taylor in the following year (1900) determined to try preventive inoculations. Of twenty-seven toy-pistol wounds appearing at the same period of the year fourteen received prophylactic inoculations (4-10 cc.) of tetanus antitoxin; thirteen received no antitoxin. All the wounds were incised, cleaned, swabbed with pure carbolic acid followed by alcohol, and done up with a wet dressing of carbolic acid, 1 to 80. The inoculated cases showed no unpleasant effects from the injections and all recovered without accident. Of the uninoculated cases one had tetanus and died.—The number of cases is, of course, too few to warrant aught but guarded conclusions, particularly as the writer plainly states that tetanus from any cause whatever had been practically unknown in his service for five years before. He quotes, however, many interesting and convincing statistics from foreign writers, all substantiating the view that prophylactic inoculations of antitetanic serum are undoubtedly protective.

Dr. Taylor describes further some repeated and patient efforts to find the tetanus bacillus in the wads of pistol cartridges from the same factories by which the toy stores in the region of the Hudson Street Hospital were supplied. All the cultures, however made and however incubated, proved negative. He quotes a similar series of experiments by H. Gideon Wells (*Phila. Med. Journal*), all also negative. The precise source of infection in these cases therefore still remains in doubt.

The writer concludes his paper with a short notice of the carbolic acid injections recommended as curative by Bacelli, and summarizes the indications for active treatment as follows:

1. To remove the infection atrium.
2. To neutralize the poison in the blood.
3. To prevent the extension of the poison to the higher centers.
4. To quiet the cells already irritated.
5. To facilitate elimination.

B.

ABSTRACTS

A SCHOOL FOR HEALTH OFFICERS.

A new departure in educational lines recently occurred in Burlington, Vt. This was the gathering together of those interested in sanitary science in that State into what is called a "School for Health Officers." This school was provided for in a law recently passed in that State and is held under the auspices of the State Board of Health. Every health officer in the State is expected to attend this school, he being paid per diem and mileage. Others interested in sanitary matters were invited to this first meeting, although only the health officers received any remuneration. Topics of interest to health officers were the main subjects considered, and these covered a variety of questions. From reports of this meeting one is impressed with the fact that it has proved to be one of practical value, the papers and discussions being such as would help to give the health officers in attendance a thorough knowledge of the work they are supposed to look after and undertake. Health officers nowadays, if they are fit for the position they occupy, must have a broad comprehension of their duties and be thoroughly versed in all that pertains to the prevention of disease. They need something more than ordinary medical training. Perfect sanitation consists of good drainage, proper disposal of sewage, correct plumbing, perfect ventilation, wholesome water, pure milk, and much more that is outside of what the general practitioner is supposed to know. Until the time comes, if it ever should come, that men should be educated for this particular calling, it would seem that such a school as the one held in Vermont will soon become almost a necessity. Certainly, it is something that is worthy of imitation and it is hoped that other States will follow the excellent example.—*Jourual A.M.A.*

SPASMODIC CONSTIPATION.

A. Mazeran (*Presse Medicale*) says that constipation from spasmodic contraction of the large intestine requires entirely different treatment from constipation due to intestinal atony. It is a distinctly neuropathic affection, the result of diminished nerve force. It differs from constipation due to atony by its prevalence in women; the influence of emotions, brain work, responsibilities, etc:, on its production and exacerbations,the lack of dyspeptic antecedents and its variability and absolute irregularity and its absence of connection with the diet. The abdomen is liable to be tympanitic, sensitive, irregularly painful, with peristaltic waves, abdominal hypertension and bunches and pseudo-tumors from the contractions. It is difficult to detect fetal matter by palpation. False desires to defecate are experienced. The constipation is exaggerated before menstruation and diminished after it is once established, which is the exact reverse of the condition observed in constipation from atony. The feces are flat or in tiny balls covered with dry mucus. Flatus is rare and odorless. There are frequently organic spasms and reflexes corroborating the neuropathic origin—gastric hiccough and constriction of the chest. Rectal enemata are sometimes introduced with great difficulty and frequently are retained causing colic. Medication should be antispasmodic, both local and general, with adjuvants of various kinds to restore tone to the nervous system. Belladonna heads the list under the first indication; even a small dose, 1 or 2 cg. in a pill or suppository, may prove effective. Asafetida, zinc valerianate and laudanum are also valuable, combined with warm sitz baths, compresses and rectal irrigation—all between 33° and 36° C., with very light massage and measures to strengthen the nervous system and the general health. All depressants, such as the bromids, must be avoided, with alcohol, hot drinks, spiced foods, etc. Purgatives are contraindicated, but a mild laxative is required during the exacerbations of the constipation. A good combination is 1 or 2 cg. of belladonna, followed in an hour by a teaspoonful of castor oil or 40 cg. of cascara sagrada. The treatment should be completed by a course of tonic sedative waters. —*Journal of the A. M. A.*

THE TREATMENT OF DIPHTHERIA OTHER THAN WITH ANTITOXIN.

J. P. Crozer Griffith (*Therapeutic Gazette*, July 15) says in regard to prophylaxis:

Thorough isolation of those affected is important, as is the careful disinfection of everything which has been in close proximity with the patient. Not only so, but individuals in any way concerned with the nursing of patients with diphtheria must come as little as possible into contact with others. Children of the family should be taken from the house whenever possible, and, further, themselves quarantined for a time—ten to fourteen days—lest they carry it to others. It is a matter of repeated observation that the germ of the disease can often be found in the throat of a healthy nurse caring for a case of diphtheria.

The nurse in attendance should wear, of course, wash dresses and a cap which thoroughly covers the hair. On leaving the room for her necessary outings, she must change her dress and disinfect her hands and face. The physician must never forget that he can himself readily become a source of danger to his other patients. Before he enters the sickroom he should cover his clothes with a garment of rubber or linen, and it is much better, too, if he can put on his head some such article as the oiled silk cap worn by women bathers at the seashore. On leaving he should wash his hands and face with a disinfectant, such as a solution of carbolic acid or lysol.

As in all infectious diseases, the room should be carefully selected in the upper part of the house, if possible opening into another room, best a bathroom. The windows of this anteroom should be kept open as much of the time as possible. All ingress to the sickroom should be through the anteroom, and the other door of the sickroom leading into the entry should be locked and the cracks stuffed with cotton or closed in some similar manner. It is commonly advised to hang a sheet moistened with a disinfecting fluid, such as carbolic acid or corrosive sublimate, at the door leading from the entry into the anteroom. All upholstered furniture, curtains, books, toys, etc., should be removed and the carpet taken up and replaced by old rugs or strips of carpeting which may be destroyed later. Pieces of old linen should be used in place of handkerchiefs and must be burned immediately. All the bed linen and personal linen of the patient should be soaked in a disinfectant solution in the anteroom before it is removed for washing. All excreta should be disinfected with a sublimate solution. The meals of the nurse should be carried to the door of the anteroom and there taken in by her. After using, the plates, forks and so on should be washed in a disinfectant, preferably carbolic acid, as bichloride will, of course, injure metal.

After the disease is over the patient must still be isolated for at least three weeks from the beginning of the attack. A still better method, where cultures can be taken, is to continue isolation until the Klebs-Loeffler bacilli can no longer be found in the throat.

A PLEA FOR EARLY CIRCUMCISION.

H. G. H. Naylor (*Australasian Med. Gazette*, June 20, 1901) says: Frequent micturition, loss of flesh, convulsions, phosphatic calculus, hernia, nervous exhaustion, dyspepsia, diarrhea, prolapse of rectum, balanitis, acute phimosis and masturbation are all conditions induced by the constricted long prepuce, and all to be rapidly remedied by the simple operation of circumcision.

In some cases the condition is removed naturally as the child grows, and the penis, by growing, exerts a wedge-like pressure and cures the condition spontaneously, but in the majority of cases no such improvement occurs, and circumcision is the only cure. When it is done early, that is to say, when the child is a month or six weeks old, it is virtually well in a week.

Another advantage of the operation is that when at the age of adolescence there is much less disposition for masturbation as the irritation produced by malodorous smegma does not exist.

Then, in adult life there is much less danger of contracting gonorrhea and syphilis.

THE DIAGNOSIS OF MENINGITIS.

Charles J. Aldrich (*Cleveland Med. Gazette*, June, 1901) says: The mode of onset varies widely and possesses diagnostic value. The violence of the onset is sometimes so marked that death occurs in a few hours after the first symptom. This is most common in the epidemic variety of cerebrospinal meningitis, which usually lacks the prodromal symptoms of the tubercular form. Rapid onset is very unusual in tubercular meningitis. The onset of the epidemic variety is not always sudden. The head pains of meningitis possess two notable characteristics—severity and persistency.

Children so young as to be unable to give other account of their symptoms will frequently complain bitterly of the headache in the beginning of the disease. Vertigo is also present, and spinal pain is also complained of.

Hyperesthesia of the skin and special senses is usually present. Sensitiveness to light and sound and even touch is very marked in some cases. Hyperesthesia of the skin is quite constant, but hyperalgesia is more certainly found. In the more severe cases which the writer has recently observed there appeared to be a very great sensitiveness to cold.

Like the onset of most of the grave infections of childhood, meningitis is often ushered in with convulsions. The type of the convulsions of meningitis is as variable as the classification will admit. In degree they vary from a slight twitching of the eyes to a violent epileptiform convulsion.

The facies and posture of meningitis are peculiar and striking.

If the patient is aroused by questions you immediately perceive a degree of apathy, mental obscuration and drowsiness, varying in different persons and in different stages of the disease. Patients are sometimes violent and maniacal, requiring restraint and constant supervision in order to prevent their doing harm to themselves and others.

The pulse may be rapid in some cases where the temperature is low, or extremely slow when the temperature is high, but its most constant and striking characteristic is a wide variation in rate, presenting in one quarter of a minute variations from three to twelve beats from the preceding quarter. This changeable pulse is characteristic of the early stages; a slow pulse, often as low as thirty-five to the minute, is observed when pressure from the accumulating inflammatory exudate takes place.

The fever of meningitis is most variable. Not one of the forms of meningitis presents a temperature curve approaching a constant type. The temperature of tubercular meningitis presents widely varying changes, but, as a rule, I believe the temperature presents a lower curve.

In the normal act of inspiration the abdominal walls are expanded but on expiration retracted. In meningitis the contrary often obtains, i.e.. there is retraction of the walls of the abdomen during inspiration and the descent of the diaphragm. Arrhythmic respiration is usually a late symptom of the disease, Cheyne-Stokes' respiration always.

Vomiting is at times a very persistent and distressing symptom. It occurs both with and without nausea. Vomiting is usually an early symptom and in children is often projectile in character; it usually ceases when the irritative stage is merged into that of cerebral pressure.

Retraction of the belly is quite a constant symptom in meningitis, but is most often seen in the tubercular variety. Not uncommonly a hard, scaphoid belly similar to that of an appendicitis is met with. Constipation is the rule and some times becomes extremely obstinate, at which times we may have abdominal distention. In the typhoidal types of the epidemic variety the tongue is dry, teeth covered with sordes, abdomen tympanitic and diarrhea may be extremely persistent.

Retention of the urine is seen late in the disease and is probably due to the spasmodic contraction of the sphincters rather than the hebetude and anesthesia incident to the later stages of the affection. A trace of albumin is often discovered in the urine and a mild hemorrhagic nephritis is not rare.

Rigidity and contracture of the legs and arms are usually late symptoms, but early in the disease a certain amount of rigidity of the back, arms, and especially of the legs may be brought out by bringing the patient to a sitting posture. This was described some years ago by Kernig and recently advanced by Netter and others, as a very constant and oftimes early symptom of meningitis.

The reflexes are often exaggerated early in the disease and are commonly inhibited in the later stages.

Quite frequently different forms of eruptions are met with as an early symptom of the disease—herpetic, petechial, hemorrhagic and bullous. Herpes on the face is very common. In the case of herpetic eruption on the face the cornea is very apt to suffer ulceration.

Early in meningitis there is great sensitiveness of the eyes to light, and the pupils usually respond to both light and accommodation, but are small. This is in the irritative stage. Later in the disease when the effusion produces pressure on the cortex,the pupils become widely dilated and then usually fail to respond to light.

Drooping of the lids on one or both sides is not infrequently met with late in the disease and often disappears and reappears in such cases. One day a complete or partial ptosis may be observed which the next day has disappeared only to reappear later. Paralysis of the internal recti muscles is very frequently seen with a resulting divergent squint.

One very striking symptom seen in meningitis and also met with in the pseudomeningitis of children is an unwinking half-open eye. Nystagmus of the lateral type is quite frequently met with early in the disease in those patients who yet have sufficient intelligence to aid you in making the test.

Loss of sight in meningitis is frequent. Examination of the discs usually shows fullness of the vessels and marked hyperemia. Later in the disease a genuine choked disk is not infrequently seen and many of the cases which recover suffer extensive and permanent damage to the visual tract.

Affection of the auditory nerve is sometimes indicated by a dullness of hearing that is out of proportion to the mental hebetude.

Paralysis of any member or any combination of members is possible in the later stages of the disease, but ocular palsies are the most common.

Pain in the joints with swelling is not uncommon in cerebrospinal fever and the inflammation may go on to suppuration. The diplococcus intracellularis has been found in the pus from such inflamed joints.

The blood presents a leucocytosis in almost every case of meningitis. It is of the polynuclear variety, and in cerebrospinal meningitis is par ticularly marked. It has been stated that leucocytosis does not occur so frequently in tubercular meningitis as in the other forms. This does not obtain, since almost all of the cases of tubercular meningitis present an increase of leucocytes.

Perhaps the greatest step towards accuracy in the diagnosis of meningitis has been made possible by lumbar puncture. The amount of fluid which it is possible to withdraw in a case of meningitis varies greatly Cerebrospinal fluid normally is a non-albuminous fluid of low specific gravity and as clear as distilled water. In meningitis we have a great increase of fluid, as we would expect from an inflammation of the membranes. In addition to this we have visual, chemical and microscopical changes in the fluid. Oftentimes the fluid appears clear but on comparison with a test-tube filled with distilled water will show a perceptible turbidity when the meninges are inflamed. Not infrequently there appear small flocculi, at other times a general turbidity and again an almost puriform condition of the fluid may exist. The tubercular variety often presents a fluid free from flocculi and opalescence. On the other hand, the septic forms of meningitis constantly show a great turbidity. The epidemic variety of meningitis often presents a comparatively clear fluid in the beginning which later may become turbid and still farther on the the disease, particularly if it tends to recovery, the fluid will again clear. The chemical changes consist usually in the disappearance of the small amount of sugar found in the normal fluid and in the appearance of albumin.

Microscopic and cultural examination of the fluid is quite frequently necessary and often determines the presence of the diplococcus intracellularis, bacillus tuberculosis, pneumococcus, or some of the various puscocci or other germs which may be present, thus disclosing the exact nature of the meningeal inflammation. Failure to find any bacteria in the fluid, absence of sugar and presence of fibrin and albumin should cause one to suspect a tubercular meningitis, since it is infrequent that we find the bacillus of tuberculosis in the fluid withdrawn by lumbar puncture.

TRANSPLANTATION OF URETERS INTO RECTUM BY AN EXTRAPERITONEAL METHOD FOR EXSTROPHY OF BLADDER.

George A. Peters (*Brit. Med. Jour.*, June 22, 1901) says: The transplantation of the ureters into the rectum would appear to hold out hopes of results highly preferable in those cases which survive, but unfortunately the mortality hitherto has been high. The deaths are due either to peritonitis or ascending pyelonephritis, but with increasing knowledge of technique there is hope that the death rate may yet be greatly diminished. If by thus converting the rectum into a cloaca the patient can hold his urine even from one to three or five hours, he is surely in a much better position to take his part in life than he could possibly be with the best apology for a bladder that can be expected to result from any flap operation.

History of a Case.

On July 15, 1899, the patient was anesthetized, and the parts were disinfected as thoroughly as possible. The sphincter was well stretched, and the rectum, having been previously cleansed by a purge and enema, was washed out with an antiseptic solution of non-poisonous strength. A fair-sized sponge to which a tape was attached was then passed into the rectum as high up as possible. This not only prevented any passage of fecal matter but assisted materially in raising the anterior wall of the rectum towards the bladder. Turning now to the bladder, a Jacques soft rubber catheter about No. 5 (English) was passed for about 2 inches into each ureter.' The part containing the eye was cut off so that the urine entered the opening upon the end of the catheter freely. A silk suture was then "caught" through the extreme end of the ureteral papilla once or twice and was also passed by a needle through the substance of the catheter so as to effectually prevent its slipping out, as it was the intention to retain these catheters in position at least forty-eight hours. Care was observed not to obstruct the lumen by passing the thread across it or by tying too tightly. The distal end of the ureter with a goodly rosette of bladder muscle aad mucous membrane was then dissected free, the catheter affording an excellent guide to its position. The idea was that whatever virtue there might be in the peculiar termination of the ureter upon the inner surface of the bladder should be retained when the transplantation was completed. As soon as the entire thickness of the bladder (which is here uncovered by peritoneum) has been snipped through with scissors or scalpel, blunt dissection may employed, and it will be found not to be difficult to free the lower end of the ureter along the wall of the pelvis without injury to the peritoneum.

Both ureters having been isolated the whole of the bladder tissue was remorselessly ablated, from the perimeter, where it merged into the skin, to the prostate wnere the vesiculæ seminales debouched. (During this dissection great care must be taken not to expose or injure the peritoneum; and if its hazardous proximity be suspected, a portion of the bladder muscle may be left, though every vestige of its mucous membrane must be removed. In my case the peritoneum gave no trouble whatever and was never in the least jeopardized.)

The next step was to expose the lateral aspects of the rectum at a point below the reflection of the peritoneum. The deep dissection was found to be surprisingly easy.

The final step of the operation was the implantation of the ureters into the lateral walls of the rectum and this was accomplished in the following manner:

With his finger in the rectum the operator carefully determines the exact point at which the implantation is to be made. The requisite qualifications are: (1) It must be above the internal sphincter; (2) it must be in the lateral and not in the anterior wall, so as to avoid kinking (this actually occurred in the first instance in the author's case, necessitating a subsequent adjustment of the implantation); (3) it must be high enough up to permit the ureter to project slightly (say ¼ to ½ inch) into the lumen of the bowel without stretching. If the ureter thus projects it forms a papilla, which when pressed upon from within the bowel becomes converted into a valve similar to that at the entrance to the bile duct and the salivary ducts. This point having been decided upon, the operator or his assistant passes a slender forceps through the anus, presses them against it from the rectal aspect and lifts it carefully into the anterior wound. The wall of the bowel is now incised upon the projecting forceps which are then forced gently through. By stretching and cutting the wound is enlarged with great exactness, so that the ureter with its contained catheter will accurately fill it and yet not be injuriously pressed upon. The forceps are now opened, made to grasp the distal end of the catheter and withdrawn into the bowel and out of the anus, the operator at the same time carefully directing the ureter through the slit, and satisfying himself that its termination forms a papilla at least ¼ inch long upon the rectal mucus surface. In guiding the mouth of the ureter through the slit in the rectal wall forceps may be passed back again beside the catheter and made to grasp the edge of the rosette of bladder tissue around the ureteral papilla. This process is repeated again upon the other side. The sponge plug is now withdrawn, care being taken not to disturb the catheter while doing so.

There seems to be no necessity whatever for stitching the ureters in position.

The whole area to be healed will be found surprisingly small, and a firm packing with iodoform gauze will afford sufficient drainage and at the same time furnish a support and splint to the delicate ureters in their new position. When the implantation has healed securely and granulation has been established, a plastic closure may be done if it be deemed advisable.

Present condition of the patient, December, 1900: It is now one and a half years since the rectum was converted into a cloaca by the transplantation of the ureters. The boy is to-day in perfect health. There is no evidence whatever of a disturbance of the functions of the kidneys. On examination per rectum the mouth of each ureter can be felt as a salient papilla as large as the tip of one's little finger.

PEDIATRICS

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Vol. XII. OCTOBER 1st, 1901. No. 7

ORIGINAL ARTICLES

PHYSICAL CULTURE IN CHILDREN—THE OBJECTS TO BE ATTAINED.*

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IN determining the objects which should be held in view in any system of physical culture for children it should be clearly understood at the outset what is included in this term.

It will be conceded that two objects are aimed at by everyone, first to raise the general bodily efficiency of the average child as found in the schools by aiding the natural spontaneous processes of growth and development, both mental and physical; and second, to assist in improving the condition of those who are found to be below par in any direction and bring them up to the standard for their age and condition so that they may progress in the same degree as the ordinary individual.

Dealing with the second proposition first, it is essential that intelligent medical supervision should be exercised over all school children, and that abnormalities and deficiencies, local or general, should be recognized and benefited promptly both by special measures and by adapting general measures to suit the particular case. This is true for children below the normal in one or more directions, and it is also clearly impor-

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Read at the annual meeting of the American Medical Association, St. Paul, Minn., June 7-9,1901, as part of a symposium on School Hygiene.

tant that any system of physical training should be initiated only by the most competent medical advice that can be obtained. I have elsewhere given at some length reasons which prove to my mind that it is of great importance that all children in all classes of life should have the benefit of skilled medical supervision during their growth.*

To discuss the manifold directions in which deficiencies are likely to show themselves would require a very long and exhaustive paper.† Therefore, assuming the proposition as established that those who are defective in some direction will require special measures and unusually intelligent supervision, the next point will be a discussion of the general propositions which obtain for the average child.

It is necessary to bear in mind that, even with the ordinary opportunities for spontaneous development which are enjoyed by the young, living either in crowded cities or in the open parts of the country and smaller towns, often many faults of attitude are acquired involving impairment of the full activity of the vital organs. It is not true, as assumed by teachers, parents and physicians, that children may be trusted to grow in the normal directions and in a satisfactory fashion unless properly directed. A casual glance over the attendance at any school in any country, under any conditions, will reveal the fact that a very large number will exhibit beginning faults of attitude which will remain and probably grow worse unless promptly and accurately corrected. Many of these are due to original errors of construction; some of them are hereditary and some acquired by extended imitation or the conditions of environment. If let alone these will gradually grow into serious postural errors, and from many of them will result further interferences in symmetric growth. Again, it must be borne in mind that a large proportion or these are not mere peculiarities to be accepted, although many of them seem as time goes on to be little more than this. Nevertheless. it can be shown that the highest degree of physical and mental efficiency will be found in those who are well set up and physically symmetric.

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* PEDIATRICS, vol. x, no. 12, 1900, "Medical Supervision of Growing Children."

† A paper by the author on "Deformities in Children as Seen by the General Practitioner" will appear in October, 1901, of *International Clinics*.

Among the causes of these shortcomings must also be enumerated defects in the organs of special sense, notably the ear, eye and nasopharynx. In dealing with these the aid of the specialist is also required. This will involve the correction of the eyes by the use of glasses; attention to the condition of the nose and throat and other local disturbances. It is not so generally known as it should be, although fully appreciated by professional men of the highest attainments, that relatively slight local errors are capable of producing a large amount of functional disorder if the general physique, especially of the nervous system, be below par in certain directions. In the same connection it should be remembered that even considerable local derangement causes little disturbance if the physique is in a state of high efficiency. If the general mechanism of the individual is in good tone many refractive and other errors in the eye cause little mischief. It is far less well known but quite true that many defects in the seeing or hearing apparatus are remediable by specialized movements of the neck and upper parts of the body. It has been my experience to see astonishing results in cases of defective hearing which have been pronounced upon as practically incurable by the best experts, entirely relieved and sometimes practically cured by physical culture alone. This statement may seem extravagant but it can be proven, and by the testimony of the very men who had given the originally gloomy opinions. This is a subject upon which I propose at some future time to offer considerable testimony.

The next point to which I wish to call attention is the condition of the thoracic viscera. It needs no proof to establish the fact that the heart and lungs and the very important lymphatic mechanism of the thorax can certainly be assumed to be in far better functional efficiency if the shape and mobility of the thorax is and remains normal. It is true that a large degree of defect in this direction is sometimes found compatible with excellent organic vigor. Again, it is plain that slight shortcomings in the way of malformation in the thorax once begun and uncorrected readily produce yet greater damage in the same direction. Unless the spinal column be maintained in a healthy condition of straightness and the bones and ligaments of the shoulders and ribs and the soft tissues controlling them retain their normal flexibility, the lungs must inevitably suffer and the heart likewise fail of its normal activity.

If it be assumed that the heart and organs of circulation are the very fountain of vigor and growth it will be clear that these organs should be for their best functionating perfectly free from external pressure, producing compression, twisting, or otherwise interfering with a normal flow of blood. Serious conditions of a most disabling sort oftentimes arise due to no other cause than this mechanic one. What is true of the larger veins and arteries is equally true of the smaller vessels and lymphatics.

It is not necessary to offer further reasons for a fact readily established that one of the most, if not the most important disideratum of a growing child is to be " well set up," and able to maintain perfectly normal attitudes during activity and repose. Therefore, the first main object of physical culture for children is to teach them what they are not always able to assume, and that is, right, normal attitudes. It would take too long here to rehearse precisely what they are, and how they are attained, although this is an important matter.

It is a most unfortunate fact, obvious to anyone who will critically study the teachings of different physical trainers, that their methods though in the main good are too often empirical and prejudiced and not based upon a sufficiently thorough knowledge of the subject. These teachers are seldom either physicians or physiologists. Too often they are not even good observers. They are far too liable to formulate a few crude rules of their own, modifications good or bad, of other persons' teaching, and insist upon certain views of therapeutics which, while better than nothing, are not altogether good. Take for illustration the position of the chest and shoulders. For a long period of time down to very recent years, military instructors trained the troops in very faulty attitudes, so much so that they were distinctly artificial and no man living could assume the old-fashioned so-called "military bearing" without assuming more or less harmful and unnatural postures which involve constrained positions of the upper part of the body. Of late years this has been much improved and they are now getting nearer to an accurate line of teaching. The most significant fault lies in the fact that the so-called military attitude involves an unnatural tension which makes it impossible for the one assuming it to be able to execute the ordinary movements of accuracy and activity without letting go this overstarched precisionism before any act can be performed. This can be abundantly proven by demonstration but cannot be very well put into words. Clearly the proper attitude would be one that is as nearly as possible a reproduction of a perfect model, a man or a woman who by natural construction and normal training has succeeded in acquiring the greatest perfection of equipoise and freedom of movement. Such instances are occasionally though unfortunately but rarely seen.

To return to the study of the chest and shoulders. One error long taught as a truth and which may still be recognized as of value is to throw the shoulders back and the chest out, the head up and the chin in. Now this can be done in such a manner as to offer no special objection. It can again be done in such a way as to place the shoulders and chest in a very ugly and temporarily useless position. To analyze this for a moment. The throwing back of the shoulders is entirely abnormal and involves a strain upon certain deep tissues and muscles of the back which makes for a wholly artificial pose and also throws the arms and elbows back of the mid-lateral line of the body and impairs the equipoise considerably. A simple rule, the observance of which can involve little error, is to let the shoulders alone but keep the back straight and hold the chest as far up as possible and keep the abdomen held in. Anyone who will do this can immediately note that the arms and shoulders are then free to move in any direction, can hang without restraint and will be instantly ready for any movement contemplated.

Some points must necessarily be considered with these, among which is the position of the pelvis, which should be maintained at as nearly as possible the position of a normal child of from five to ten years of age, that is, almost on a level. The first and most constant error into which the adolescent falls and one which is obvious in most adults is to allow the pelvis to tilt too far forward to relieve the rather exaggerated dorsal and lumbar curves which, it is true, are regarded as necessary compensatory curves as age creeps on but which too often are really pathologic.

To illustrate still further what I assume from a careful study of the subject to be the normal attitudes would require too much space for full description here. If these are maintained the act of walking is a perfectly easy and efficient one, and locomotion can be maintained almost indefinitely and at a very great speed and ease without the element of awkwardness and strain, hence lost motion and early fatigue.

Almost the first and certainly the most important factor is the position of the pelvis, which should be held as nearly as possible at a level. Then the action of the thigh-bone at its junction with the pelvis is so easy that the slight forward leaning of the body as in stepping forward allows the leg which is raised to swing forward with almost no effort. If the pelvis is tilted ever so little down this act is performed laboriously like a person climbing a declivity. Movement along a level ought to be almost free from conscious effort. A child or even an adult trained in this particular can walk at a much higher rate of speed and maintain this for a very much longer distance than a much stronger person who fails to observe the requisite condition.

Next comes the very important subject of the right method of breathing. Here, again, many fallacies are taught. The exercise of breathing is of the greatest value. The diaphragm is a muscle of vast and unrecognized importance and is capable of development and improvement in the same way and to a much more important degree than the more obvious muscles of the arms and legs. The object to be aimed at in right breathing is to acquire the fullest degree of elasticity of the thoracic walls and ligaments and to secure the greatest degree of freedom and elasticity for the upper part of the chest and the tissues lying in and around the back of the neck.

As is well known nine-tenths of the ordinary movements of life are flexions. Little more than one-tenth involve definite extensions except it may be in the case of the legs. This restriction in the freedom and universality of the bodily movements obtains in children as well as, though to a less degree, in adults, and especially is it true of city children and those who enjoy less than the normal opportunities of generalized activities.

In consequence of this slight faults of attitude due to inherited or acquired conformation are rapidly increased and exaggerated until we see in children of five or six years of age pitiable replications of the commoner forms of adult anamorphosis. These stooping shoulders, sunken chests, drooping or protruding heads and half bent knees are chiefly due to lowered muscular tone. When asymmetries arise, lateral pulls or twists in back, or neck, or legs, this condition has gone further and degenerative changes have begun which are evidences of more serious defect or of congenital obliquities.

Another group of phenomena indicates occupational warpings, among which may be mentioned lowered right or left shoulder, tilted pelvis, pigeon-toes of one or both sides, exaggerated lumbar or dorsal curves, clawed hand, etc.

To remedy all these one paramount thought must always guide. These defects rise primarily from lack of extensor tone. In many instances there is found normal flexor power with an insufficient or non-compensatory extensor capacity in the muscles. It is a fact borne out by my clinical findings that extensor power may gradually lessen or become almost lost from disuse and yet flexor power remains. It may be restored in a great measure but not always. This leads me to the assumption admitted by physiologists, that in the motor areas there are two sets of cells, one for extension and one for flexion. The development of the flexor activities may not be accompanied by an adequate development of the movements of extension and the result will be asymmetries more or less conspicuous or permanent.

Normal development involves the ideal of the acquirement of perfect activities. Complete freedom to act and normal impulses and capacities to perform motor acts will result in normal outlines and functions. If this be not afforded after sufficiently long periods and opportunities intelligent direction must be supplied. The teacher needs to know the basic principles and to be able to adjust his methods to the exigencies encountered. Failing this and proceeding on old empiric lines, he may improve the muscles and through them other tissues more or less, but he will not secure full functional efficiency.

Two thoughts must ever be held in mind also: (1) The fact that no plan of systematic training can replace spontaneous activities, the product of the "play impulse." As a relief to the fixed attention of school hours too much special training induces additional fatigue unless provided with attractive elements encouraging the play instincts. Rightly used this should supplement the absolutely essential school recess spent in greatest freedom of movement and noise.

(2) The fundamental value of systematic training is to give accurate direction during the plastic period to the development of the central nervous system. For if brain cells are allowed to pass the plastic period without the benefit of rightly directed stimuli and training they will never fully develop. Thus, and thus only, can a human being acquire that command

of both motor and sensory paths which fits him for the accurate and efficient working of both the body and the mind and the endless intermediary acts by which body and mind supplement each other in all the functions of life, intellectual and vegetative.

The subject will ever widen out as it is studied, and warrant the attention of teachers of the highest lines of thought, because it is becoming more fully demonstrated year by year, that upon physical efficiency depends mental potentiality. Indifference or prejudice in the minds of sedentary teachers can never alter this obvious fact, that the best progress in schoolteaching inextricably involves two interdependent factors, which constitute the ground-work for comprehensive results.

ETIOLOGY OF ARTICULAR RHEUMATISM.

Singer (*Wiener Klin. Woch.*, No. 20, 1901) found upon autopsy streptococci in the various organs of five cases of acute articular rheumatism and one of rheumatic chorea. In another case of chorea accompanied by an inflammation of the elbow, preceded by a follicular tonsillitis, the staphylococcus pyogenes aureus was present. In 1898 the author wrote of the many clinical and anatomical similarities between acute articular rheumatism and staphylo-streptomycoses. Gradually it is being recognized clinically that there are a number of obscure and ambiguous diseases which belong in the borderland between acute articular rheumatism and cryptogenic pyemia. The discovery of a specific organism has been announced several times but as we know that pneumonia and endocarditis can be caused by several varieties of bacteria, so in acute articular rheumatism no single variety can be held as its only cause.—*Medical Age*, July 10, 1901.

Graduates of the Bellevue Hospital and of the New York University Medical College have organized at Chicago a Western Alumni Association of the two institutions named.—*Atlanta Journal-Record.*

RINGWORM AND FAVUS.*

THE NEED OF AN INSTITUTION IN NEW YORK SIMILAR TO THE "ÉCOLE LAILLER" OF L'HÔPITAL ST. LOUIS, PARIS.

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THE steady increase in the number of children with scalp affections, due to the tricophytons, applying for treatment in the dispensaries of New York, the lack of interest in, as well as failure to recognize the importance of these cases shown by most dispensary physicians; the obstinacy of the disease—due to lack of time and assistants in treatment,—the serious loss of time from school on the part of the children affected—all indicate the need in New York of a centrally located hospital and school for children suffering from contagious scalp affections.

Such an institution should be modern in construction, with a well equipped bacteriological laboratory, an adequate corps of nurses and teachers (so that children could continue their studies while undergoing treatment,) a lecture room where lectures and clinics could be given for physicians and school inspectors and a dispensary for out-door patients.

The nearest approach to such an institution existing at present is the Randall's Island Hospital, where between 150 and 200 children have been under treatment in special wards for scalp diseases for periods varying from a few weeks to five years. While the wards are kept very clean the location is rather inaccessible and the responsibility of treatment too divided to insure adequate interest or success in the work.

With a more generous allowance for epilators and a reorganization of the service it might be made a model of its kind. For comparison it might be interesting to give a brief historical sketch of the "École Lailler," in Paris, and what its laboratory is doing in the study of scalp affections.

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* This article was received August 15, 1901.

Prior to 1890 the Parisian children suffering with scalp diseases who applied for relief at L'Hôpital St. Louis were put into the general wards until Quinquaud set apart a portion of the "Salle Bazin" for the treatment of the "teigneux" or ringworm cases. This was an old building with a limited number of beds, so that an "ècole externe" was instituted for the treatment and instruction of those who could not be admitted. It was here that Quinquaud introduced his method of treatment called "rugination," consisting in a vigorous curetting of the diseased patches with a sharp spoon, removing diseased hairs, scales and epidermis; rather brutal in appearance but a marked advance on previous methods. When Besnier took charge of the service he had a young hospital interne, Sabouraud, who took up the bacteriological study of the "teignes," and demonstrated the distinct differences in these confused scalp affections.

It is true that fifty years previously Gruby had most carefully described these scalp fungi in a note to the French Academy of Sciences, but his contribution to science had been completely ignored by the medical profession, due in a large measure to his unfortunate use of words, as, for example, instead of saying "teigne tondante," he used the words "porrigo decalvans," a name at that time used for alopecia areata. Hence subsequent investigators looking for his "microsporum Audouini" in alopecia areata, went continually astray, although it is only necessary to read Gruby's description to see that he had in view, not alopecia areata but ringworm of the scalp. He described "rounded patches covered with fine grayish scales; lustreless hairs, friable, breaking by simple bending; spores pressed one against the other. He even distinguished two varieties, the one small (1-5 *mu.*) the other large (4-8 *mu.*); he described the existence of the parasite at the surface of the desquamating epidermis, etc."

The clearness of this description and its lack of appreciation for fifty years, until its re-discovery by Sabouraud in 1892 reads like fiction. Credit is due to Sabouraud, however, for recognizing and correcting this error, in giving full credit to Gruby and in obtaining pure cultures of the "microsporum Audouini," the causal agent of the "teigne tondante a petite spore," as well as in isolating by culture methods nineteen varieties of the tricophyton. He demonstrated that one never finds the microsporum in the same head with the megalosporum. That the "Audouini" is an endo-ectothrix; the long, slender, jointed mycelium growing lengthwise within the hair while the closely packed spores (3 to 4 *mu.*) form a sheath around the hair enveloping the shaft sometimes to a distance of 1 or 2 cm. above the surface of the scalp. When one of these diseased hairs is epilated and examined under a low power magnifying glass it has the appearance of a "glass rod which has been dipped in glue and then rolled in fine sand." (Sabouraud).

The megalosporum exists only within the hair and never forms a sheath. The spores, varying in size up to 8 *mu.*, are arranged in longitudinal chains.

Ringworm of the face and body is almost exclusively due to the megalosporum.

Sabouraud isolated many varieties of ringworm derived from animal sources, such as from the horse, dog, cat, cow, rabbit, birds, etc., giving variously colored growths—violet, pink, yellow, dark brown.

Dr. Sabouraud

About this time (1892) an epidemic of "teigne tondante" broke out in the Hospital for Tubercular Children at Berg-sur-Mer, and Besnier was appealed to for aid. He sent his interne, Sabouraud, who examined and found out of 500 children, 350 affected, the boys being mostly affected with the "petite spore" and the girls with the "grosse spore." After nearly a

"École Lailler" of L'Hôpital St. Louis, Paris.

year's work with a corps of epilators and careful isolation, the disease was entirely exterminated. Coming back to Paris with an enthusiasm only intensified by the general indifference or ignorance on the part of the public and the profession in the care of these cases, Sabouraud set to work to found a special hospital and laboratory for the study and treatment of scalp affections.

Aided by the Assistance Publique and by private subscriptions, he founded in 1895 the "École Lailler" in the northwestern end of the St. Louis Hospital reservation.

The Ecole Lailler is a three-story brick-and-stone structure occupying three sides of a hollow square. The large courtyard affords an ample playground for the 350 children fortunate enough to be admitted. Large dining rooms, well-aired sleeping rooms, modern lavatories and toilet rooms, well lighted schoolrooms and abundant nourishing food make their lot an enviable one.

Outside of their school hours each child has a weekly "séance" with the epilators, of whom there are sixteen. Each child has all the diseased hairs in each patch epilated as well as a margin of 1 or 2 cm. of sound hairs around each patch. The rest of the scalp is shaved, rubbed with a solution of tincture iodine, iodide of potash and glycerine and a white cap tied on for protection. Once a week each child must pass in review for examination by Dr. Sabouraud or his assistant. At these inspections the applications of croton oil on the end of a tooth-pick mop are made to diseased follicles, follicular contents with diseased hairs are expressed, applications of tincture iodine and glycerin are made, areas mapped out for epilation, etc. Three or four months is the average time required for a case; untreated ringworm may last five years; favus may last ten to twenty years untreated.

Objectors to the croton oil treatment claim that it leaves permanent bald spots, but such is not the case when applied carefully to a few follicles at a time; enough hairs reproduce to cover the patches entirely.

All children refused by the school inspectors can appeal to Sabouraud as supreme court of appeal; his certificate is final. When cases are considered as probably cured the child is discharged with the injunction to return in a month for observation and if there are no signs of recurrence a primary certificate is given. At the end of another month the "certificate définitive" is given.

A branch of the Ecole Lailler, "École B," in another part of the grounds is devoted exclusively to favus and pelade (alopecia areata), so that children affected with those mildly contagious scalp affections cannot contract the extremely con-

"École Lailler of L'Hôpital St. Louis, Paris

tagious "teignes." The pelade cases, about sixty in number, are treated by the Finsen electric light apparatus in tri-weekly "séances" of one-half to three-quarters of an hour. Two to three weeks suffice in most cases. The favus cases, only about fifteen in number, are treated by monthly epilation, and daily use of tincture iodine in some combination; they average four to five months' treatment before being cured.

The hospital laboratory, very complete in its equipment, has a remarkable collection of "teigne" cultures from all parts of the world, a projection room for lectures and microscopic slide projection and a clinic room for class demonstrations. Tables for physicians doing original investigation, as well as all material used are furnished free of charge.

The teignes while not so frequent here as in France—there being 3,000 cases in Paris alone, or 5 per cent. of the infant school population, only 2 per cent. of which can receive hospital or dispensary treatment, leaving 3 per cent. to become street vagabonds—are nevertheless much more common in New York than supposed, as may be seen from Board of Health statistics.

Dr. Aspell, chief of the staff of school inspectors of the Board of Health, says there are 145 inspectors who visit 268 schools daily during the school season in New York City, and that in the year 1900 3,426 children suffering from parasitic affections of the head were refused admission to the public schools. He estimates that 25 per cent. of these were affected with ringworm, or about 857 cases. That in the six months of 1901 just ended, 1822 children were refused by the inspectors on account of parasitic scalp affections—66 for favus, 549 for ringworm; a total of 615 vegetable parasite diseases of the scalp or over 33 per cent. for the first half year. This is probably much below the real extent of the disease, as the work of the inspectors is simply colossal; there being in the first six months of this year over 56,000 children set aside by the teachers to be examined for all diseases. Four hundred and seventy-three were for skin diseases and exanthemata. There is manifestly no time for microscopical examination in doubtful cases. No microscopical examination is made when ringworm cases are received as cured. These rejected children, about a thousand a year, are sent home with a card stating the reason for refusal and advised to be treated; but there is no special hospital for them, and after the discouraging treatment of the dispensaries many give up and become "truants." Some are caught and sent to the truant school but the majority become street vagabonds with all its deplorable consequences.

The New York Skin and Cancer Hospital treated in the year 1899, 130 cases of ringworm, including favus—this was nearly 5 per cent. of the total number of cases treated.

It is very probable that the first cases were contracted from contact with immigrant children who were landed in great numbers up to a few years ago and who brought the disease with them. Later, cases were held for treatment at the expense of the steamship companies until, for financial reasons, they became very much more careful in their inspection, so that the last year only eight cases were landcd, while forty-six were deported. The disease is widely disseminated and more active measures should be taken to protect the school population.

224 W. Fifty-second Street.

THE TEETH AND GROWTH OF CHILDREN.

At a recent meeting of the Harveian Society Dr. W. H. Dolamoret read a paper in which he pointed out the importance of the first set of teeth, both in regard to health and growth. He first showed how injurious an effect upon the health of the child might be produced by the septic condition of the mouth induced by caries of the deciduous set of teeth. Among other conditions he mentioned ulcerative stomatitis, necrosis of bone and enlarged lymphatic glands, which latter might become the seat of tuberculous growth, by which the whole system might become infected. He also traced much gastric disturbance to the same cause. Then he insisted on the important part played by the first teeth in regard to the growth of the child, and he concluded that the mastication of food could not be interfered with by the decay and extraction of deciduous teeth without impairing the health of the child.—*N. Y. Medical Record.*

CHRONIC INTESTINAL OBSTRUCTION WITH REPORT OF A CASE.

By D. S. Hanson, M.D.,
Cleveland, Ohio.

INTESTINAL obstruction is a mechanical impediment to the passage of the feces; it may be congenital or acquired. The chronic form in children is comparatively rare, yet not more so than the great majority of other chronic diseases of childhood, the few months or years that the patients may have lived not giving the necessary time for the development of chronic pathological processes.

The acquired form may be due to several causes, mainly inflammatory in character. The most common are adhesive bands, which are the result of inflammatory exudates not wholly absorbed and producing obstruction by contraction. This exudation is usually due to either general or local peritonitis, sometimes as a sequel to appendicitis, cholecystitis or hernia. Not uncommonly the obstruction is due to local tubercular or syphilitic processes. After the reduction of a strangulated hernia the loop of intestine may be contracted and atrophied from the continuous pressure it has been subjected to, but the obstruction that follows reduction in these cases is more commonly due to contraction of the inflammatory exudation which surrounds the intestine. The same condition may obtain after the reduction of an intussusception although less common than that following hernia.

Congenital malformations producing chronic obstruction are usually developmental but may be due to peritonitis before birth. They occur in about 1 in 17,000 births and are usually due to stenosis. The junction of the duodenum and jejunum is the most frequent location of chronic obstruction and when high up a deficient urinary secretion may be present. Malformations of the ileum are most frequently present a little above the ileocecal valve, just above the point where the omphalomesenteric duct is given off. The reddish, warty growth of the umbilicus covered by mucous membrane is a variety of this defect. A chronic stenosis of the ileocecal valve is less common.

There may be obstruction in any part of the large intestine and next in frequency to this are deformities of the rectum due to imperfect development of the perineum. The rectal obstruction due to congenital narrowing is sometimes not noticeable while the stools are semi-fluid in infancy and is first observed when the child grows older and stools become more consistent. Rectal polypi, hypertrophied valves and foreign bodies of various kinds that partially occlude the lumen of the gut (such as needles, pins, buttons, etc.,) may be the cause of this condition.

Symptoms present are constipation, eructations, tympaniitis due to gas in the intestine above the obstruction, diarrhea sometimes alterating with constipation, colicky pains. As obstruction becomes nearly or quite complete vomiting supervenes and symptoms develop resembling those due to acute obstruction. It is surprising to note how well a child will do when the caliber of the intestine is reduced to even as low as one-sixth to one-eighth of its normal diameter. In cases of long standing with marked obstruction the fluid portion of intestinal contents may be absorbed causing headache, nervousness, moroseness, foul breath, coated tongue, dry skin, etc., while the child is poorly nourished and easily fatigued.

Stomach dilation is rare, but the colon may become immensely dilated when the obstruction is low down.

Much has been written regarding syphilis of the viscera. Some parts are especially liable to become affected but the intestine seems to enjoy considerable immunity, and when involved does not suffer from gumma but from a connective tissue deposit which by later contraction produces the obstruction. The process is usually a slow one and gives rise to the typical symptoms of slowly developing chronic obstruction. Bangs and Hardaway make the statement that intestinal obstruction due to congenital syphilis can only be diagnosed by microscopical examination of the tissue post mortem. The case I wish to report is one that was in all probability due to congenital syphilis.

Frank B., age 7 years, was a poorly developed, weasen lad, had always been a poor eater; skin sallow, and boy looked in the face to be several years older than he really was. His father was syphilitic at time of marriage. So far as his parents had observed he was not troubled with constipation and was not markedly tympanitic. When I first saw him he was already moribund. Post-mortem examination showed general lack of development, marked emaciation, considerable dilatation of the small intestine through its entire length to within a few inches of the omphalo-mesenteric duct where a mass about 2 inches in diameter and 2½ to 3 inches in length surrounded the ileum, reducing its caliber to such an extent that an opening could be demonstrated only with the most careful examination. The mass superficially was composed of the thickened peritoneum infiltrated with serous exudate while nearer the intestine it seemed to be a dense mass of connective tissue. I exhibited the specimen to a medical society the day of the post-mortem and it was in some way mislaid so that a microscopic examination was not made.

The boy's teeth were exceedingly poor but not typical of syphilis, neither had he skin or bone disease of any kind, but the poor development of the boy, slowly developing obstruction, nature of the deposit with syphilitic history of father makes the diagnosis reasonably certain.

1419 Broadway.

EXPLORATORY INCISION IN DOUBTFUL TUMORS.

When a doubtful tumor has acquired the characteristics of malignity it is inoperable. It should be extirpated while still in the benign stage. Quenu makes a practice of incising all doubtful, operable tumors, in order to determine their nature, proceeding to their ablation if found necessary. He disapproves of specific treatment in cases of doubtful tumors of the mamma, believing that valuable time is wasted on this differentiating measure, while an exploratory incision answers the same purpose and allows the removal of a malignant growth in its incipiency.—*Presse Médicale.—Jour. A.M.A.*

FOOD FOR IDIOT CHILDREN.

Two cases of fulminating hematemesis in consequence of swallowing bones, induce Bourneville to emphasize once more the necessity of strict supervision over the food of idiot children, that such accidents may not occur.—*Progrès Médical.—Jour. A.M.A.*

EDITORIAL COMMENTS

Recent Action of the Department of Health in Relation to Malaria in New York.

It is to be noted with satisfaction and commendation that the Commissioners of Health of this city have taken the action described in the following resolution and comment, which we copy from a recent issue of the *New York Times:*

"Whereas, Recent investigations have shown that malarial fever is an infectious disease and can be largely prevented by the adoption of simple precautions; and

"Whereas, It is the desire of the Department of Health to prevent the extension of malarial fever, which now exists in some of the boroughs, to the other boroughs, and to restrict its prevalence in those boroughs where it already exists; therefore be it

"Resolved, That all public institutions, hospitals, homes, asylums etc., be required to report all cases of malarial fever which come under their observation, giving the name, age, sex, occupation and present address of the patient, and also information as to whether the attack is a primary infection or a relapse, and the address where the disease was probably contracted.

"Resolved, That all physicians in the City of New York be requested to furnish similar information in regard to patients suffering from malarial fever under their care.

"Resolved, That the circulars of information of the Department of Health regarding "the causation and prevention of malarial fever" be mailed to the addresses in which malarial infection has apparently been contracted, and also to the addresses from which the cases are reported when these are different.

"Resolved, That postal cards for furnishing the required data be prepared and forwarded to institutions and physicians for reporting the cases of malarial fever which come under their observation, as is done in other infectious diseases.

It is probable that at the next meeting of the Board of Health the sanitary code will be amended so as to fully define the duties of sanitary inspectors in regard to places which are a source of malaria through the existence there of the anopheles, or the malaria-spreading mosquito."

This resolution is timely and intelligent, and it is to be hoped that the details of the plan will be worked out promptly and malaria permanently classified, where it should be, with the preventable infectious diseases. There is no doubt that rigid protection of fresh malarial cases from mosquitoes, prompt administration of quinine (if necessary, furnished *gratis* to those unable to pay) and a wholesale campaign against anopheles mosquitoes and standing water in our suburbs would in a year or two reduce the number of fresh cases by 80 or 90 per cent. It may fairly be expected also that the action of the Health Department here will be extensively imitated elsewhere throughout the country, and that in a year or so more the profoundly beneficent results of Major Ronald Ross's epoch-making discovery may be extensively felt and realized in all the malarious regions of the United States.

B.

"Schumburg's Method of of Purification of Water for Military Purposes."

A paper of this title makes an interesting and useful part of the large volume (just published) of Proceedings of the U. S. Association of Military Surgeons at their meeting in New York last June a year ago. The author is Capt. John H. Huddleston, Assistant Surgeon, N. G., N. Y., whose medical friends are probably more accustomed to see his name without its military appendages. Dr. Huddleston has made an exhaustive series of experiments upon water of various degrees of contamination, and fully confirms Schumburg's statements, namely, that water of almost any reasonable degree of contamination with pathogenic bacteria can be made potable by the addition of comparatively small amounts of bromine.—After the bromine has acted for a short time (we have no space for the details of the method), it is neutralized with a base (ammonia does very well), the resulting bromide not being present in large enough quantity to affect either the taste or hygienic qualities of the water. Resistent forms of non-pathogenic bacteria are not killed, but this would not detract seriously from the value of the process since diphtheria and typhoid germs would be those most dangerous and least apt to survive. B.

Report of the New York Pathological Society

The Proceedings of this Society for 1899 and 1900 are now in the hands of the members. The matter printed fills a good sized octavo volume and the press-work is of the first quality. In looking through the minutes of the successive meetings, however, one cannot but be disappointed at the comparative lack of original research which characterizes many of the contributions. Three-fourths of the book is taken up with trivial descriptions of anomalies more or less rare and curiosities more or less curious that have turned up at autopsy. If the Society were one for the study of *pathological anatomy* only, this might be excusable, but pathology examines not only the *seats*, it seeks also the *causes* of disease, and here we note a mournful lack. There are scarcely half a dozen papers where a patient, systematic, logical attempt at finding out something unknown in scientific causation has been described. Might we not look for something better in the Proceedings of a Society which counts among its members some of the most noted students of scientific medicine in the country? B.

SOCIETY REPORTS

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

An Ordinary Meeting of the Society was Held at the North-eastern Hospital for Children, London, England, on April 19, 1901, with Dr. A. Ernest Sansom Occupying the Chair.

The Chairman showed a lad, aged 11 years, afflicted with arthritis deformans, which had commenced in December last with a febrile disease said to have been rheumatic fever. Many of the joints were affected; there was complete ankylosis of both knee-joints and thickening about the cervical vertebræ (spondylitis). There was no enlargement of the spleen and no structural affection of the heart. The muscles were wasted, and the skin slightly pigmented. Improvement had taken place under massage and measures likely to promote good nutrition.

Mr. R. Clement Lucas suggested that the joint mischief might have originated from a focus of suppuration about the joints, tonsils, ears or eyes. In a recent case of osteoarthritis he had found staphylococci in fluid from the hip-joint. He inquired whether a bacteriological examination had been made in Dr. Sansom's case.

Dr. Theodore Fisher argued that arthritis deformans was merely a variety of rheumatism altered by the idiosyncrasy of the patient.

Dr. W. Milner Burgess asked whether there was any history of rheumatism in the child's family. In a case at present under his care nearly all the members of the family suffered from acute or chronic rheumatism.

Dr. George Carpenter pointed out that the skiagrams showed no alteration in the bones but some adventitous material round the parts, so that the thickening of the joints was more apparent than real. He thought the case was on all fours with the secondary joint disease of meningitis. In the plastic material around the joints Still had found a specific organism.

Dr. Sansom, in reply, said there had been no evidence of suppuration nor had a bacteriological examination been made. There was no rheumatic heredity in this case. He believed that organic heart disease sometimes found with arthritis deformans was an epiphenomenon.

Dr. James Taylor showed a case which he believed to be a connecting link between cases of pseudohypertrophic paralysis in which no lesion of the spinal cord is found, and cases of chronic degeneration of anterior-horn cells of the spinal cord (progressive muscular atrophy). The boy, now aged 10 years, had been under observation for three years. He had not become obviously worse, and at times had distinctly improved. The disease was not symmetrical; there were marked fibrillary twitchings in the affected muscles.

In connection with Dr. Taylor's case, Dr. J. H. Sequeira showed three boys suffering from progressive muscular dystrophy. Each was an advanced case and had been under observation for some years. The characteristic phenomena were present. An interesting feature was that although the three patients were members of large families there was no similar affection in the brothers or sisters.

Mr. Douglas Drew demonstrated three cases of nævo-lipoma for Mr. A. B. Roxburgh (introduced). The first case showed extensive nævus of the venous type affecting the leg and the lower part of the thigh with marked thickening of the subcutaneous fatty tissue. The second case was that of a child of 12 months with a large lipoma of the thigh. The third was a baby of 3 months with fatty growth of the axillary, pectoral and infraspinous regions. It also involved the under surface of the arm and some portions of this part of the tumor were nevoid.

Mr. Douglas Drew showed a child of 6 years with rickety deformity of the lower limbs. Twelve months previously McEwen's osteotomy was performed for marked genu valgum with dislocation of the patella outwards when the knee was flexed. The result of the operation was satisfactory so far as the straightening of the limb was concerned but it had failed to cure the dislocation, although splints had been worn since the operation. Mr. Drew was about to perform a second operation for the cure of the dislocation.

Dr. J. Porter Parkinson showed two specimens: (1) A gumma in the wall of the heart of an infant, aged 3 months; (2) a perforating acute gastric ulcer in a male child aged 2 years and 2 months. The patient from whom the first specimen was taken was brought to the hospital in a dying state. At the autopsy the child was seen to be wasted, with the remains of a blotchy rash on the body. In the lungs and spleen were numerous tubercles. In the wall of the left ventricle, just below the auriculo-ventricular groove, close under the visceral pericardium, was a pale, tough, yellow mass, ¾ inch in diameter and ¼ inch thick, well marked off from the adjacent muscle. The valves and the rest of the heart appeared healthy. The other organs of the body were normal to the naked eye. The growth was examined microscopically, and Dr. Targett furnished the following report: "The nodule in the heart is composed of young inflammatory tissue in various stages of development and the adjacent muscle is infiltrated and destroyed. The lesion is evidently syphilitic and may be regarded as a gumma of the heart." Dr. Parkinson remarked that the records of the Pathological Society contain only one similar specimen, exhibited by Mr. Shattuck in the year 1880. The lesion therefore was extremely rare.

Dr. Parkinson's second specimen was from a child who had suffered for ten days from slight fever, occasional vomiting and gastric symptoms. It suddenly vomited blood and became collapsed with typical symptoms of acute peritonitis. At the post-mortem examination sixty hours later the peritoneal cavity was found to contain about a pint of turbid fluid. The omentum was thickened and matted by adhesions but no tubercles were seen. Liver and spleen normal. Near the center of the posterior wall of the stomach was a punched-out ulcer with thickened edges, and a perforation a little larger than a pin-head at its base. The peritoneum forming the posterior wall of the small bag of the peritoneum was adherent to the stomach and there was no escape of the stomach contents. One or two of Peyer's patches were slightly swollen. A second small ulcer was to be seen on the posterior wall of the stomach near the one described.

Dr. George Carpenter thought the mass in the heart might be equally well one of tubercle. He had published an almost identical case (PEDIATRICS) in a child a year old. The child was both syphilitic and tubercular and he did not commit himself beyond the statement that it was an example of fibroid disease of the heart.

Dr. Theodore Fisher regarded the absence of caseation from the specimen as a point in favor of its syphilitic origin.

Dr. Parkinson, in reply, said the evidence of gumma depended on the hardness of the lesion, the absence of caseation and the microscopical report.

Dr. J. H. SEQUEIRA showed three children, two boys and one girl, who had been treated for lupus by the Finsen method. The results had been excellent. Photographs of the patients before treatment were shown and attention was called to the advantages of this form of treatment over surgical methods especially when the disease attacks the face. The chief drawback was the time occupied by the treatment. One of the patients, in whom nearly the whole of the left cheek had been affected, requiring over fifty sittings.

Dr. G.A. Sutherland asked whether excision of the lesions would not have produced as good a result and much more speedily. Was the light treatment any guarantee against recurrence?

Dr. Sequeira, in reply, said that excision could only have been carried out in one of the cases. The Finsen method was painless. Recurrence might follow excision, but not, so far as he knew, the light treatment.

Dr. Dan McKenzie showed a baby, aged 11 months, who had been brought up on proprietary food and was now the subject of scurvy. She showed pain and tenderness in the lower limbs and changes in the gums, but no anemia; no signs of rickets.

Dr. J. H. Sanders mentioned a similar case where benefit had followed alternation in diet and the legs had been put up in plaster of Paris.

Dr. George Carpenter related a case in a child where the gums had been treated with chlorate of potash, with the result that the liver became much enlarged and the child nearly died.

The Chairman said chlorate of potash was a dangerous drug owing to its destructive influence on blood corpuscles. Practitioners should think twice before administering it, especially to children.

Dr. Theodore Fisher read a paper upon a case of swelling of the eyelids after a warm bath. A girl, aged 9 years, frequently suffered thus. The swelling, which was considerable, was fully developed from half an hour to an hour after the bath and lasted from twelve to twenty-four hours. That the swelling did not occur after every bath was a curious feature of the case and no definite reason for the spasmodic character could be made out. It was thought that atmospheric influence might have something to do with it. No intermittent albuminuria was present in this case, as Dr. Fisher had found in some of the more marked cases of swelling in the eyelids occurring in children.

Dr. George Carpenter asked whether urticaria was present and had the child any gastro-intestinal disturbance?

Dr. G. A. Sutherland enquired whether there was any family or personal history of asthma or of eczema.

Mr. Sydney Stephenson said that he had had on several occasions children brought to him with swollen eyelids and in more than one such case, on stripping them, he had found patches of urticaria about the body.

Dr. Theodore Fisher, in reply, said that he would enquire into the suggestion that urticaria was the cause. He believed there was no eczema, but could not be certain about asthma.

ABSTRACTS

DIAGNOSIS AND SYMPTOMATOLOGY IN THE APPENDICITIS OF CHILDREN.

Thomas H. Manley (*Jour. A.M.A.*, June 1, 1901) points out that appendicitis presents practically the same sexual difference in early life as is noted later in the adult; thus Jalaguier records of 182 cases in his own practice, that 4 were under 5 years; 42 from 5 to 6; 64 from 10 to 15; 25 from 15 to 20. There were 112 males and 70 females. According to Bamburger's table the relative frequency as to age was: Under 2 years, 2 cases; 15 to 20 years, 20 cases; 20 to 30 years, 32 cases; after 30 years, 17 cases. Fitz's table shows: 20 months to 10 years, 22 cases; 10 to 20 years, 86 cases; 20 to 30 years, 65 cases; after 30 years, 55 cases. Matterstock's table shows: Under 2 years, 2 cases; 2 to 5 years, 10 cases; 5 to 10 years, 25 cases; 10 to 15 years, 35 cases. Gordon's table reads: 2 to 5 years, 5 cases; 5 to 10 years, 33; and 10 to 15 years, 41 cases. Bruns' table says: 1 to 5 years, 3 cases; 5 to 10 years, 20, and 10 to 15 years, 12 cases.

In reviewing his own notes on appendical cases seen in hospitals, in consultation and in his own practice, he finds 67 cases under 15 years old; 16 were operated on with 4 deaths; 5 were attended with advanced general peritonitis and died without operation. Forty-two others were seen; 6 very severe cases in which operation was refused, of which 2 died. Forty-six were of various types in which it was not believed that laparotomy was imperative; of these all recovered except two in tubercular patients under 9 years. There were 41 males and 26 females, the youngest 3 years old, the abscess bursting through the umbilicus. The ages were: 3 to 4 years, 1 case; 4 to 5 years, 4; 5 to 10 years, 26, and 10 to 15 years, 35 cases.

As contrasted with the adult, the pathologic conditions which may be confounded with appendicitis or mistaken for it in the child are few in number. The two most prominent are intussusception and tubercular peritonitis. Dr. J. Cromby reported 18 cases of floating kidney in children. Tuffier records three similar cases in children of 6, 9 and 10 years of age.

Halle and Barnard record a case of perinephritic abscess in an infant 18 months old.

Tubercular disease of the lumbar vertebræ is not uncommon in children, but the psoas abscess resulting in them usually follows the muscular sheath out under the crural arcade.

Umbilical abscesses in young children are most frequently of appendical origin.

Guiteras cites a case of abscess in a cystic terminus of the ureters, which had been diagnosed appendicitis.

Genito-urinary disturbances may lead to mistakes in diagnosis when a large, deep, tense appendical abscess greatly stretches or compresses the ureter, or when it bursts into the bladder and leaves a fistulous opening, connecting one with the other.

Typhlitis with or without perforation, a condition said to be not very uncommon in tubercular peritonitis, presents practically the same physical signs as appendicitis, although some authorities allege that in tuberculosis perforations rarely occur.

The more common maladies which present several features similar to appendicitis are:

Tubercular Peritonitis.—Tubercular peritonitis may be general or localized; when limited to the mesentery or parietal peritoneum, and when there is attendant paresis of the intestines or ascites it is quite impossible to affirm whether or not the appendix is involved. Under these circumstances I have often seen an operation undertaken for appendicitis reveal no lesion ot the organ. The acute, fulminant type of peritoneal tuberculosis is said in the majority of cases to have its primary seat in the peri-appendical lymph tissues contiguous with the cæcum.

Intussusception.—This condition is one that quite invariably belongs to early infancy, Wiggin, Kelsey and Carpenter have recorded successful laparotomy for it in infants from 2 to 3 months old. It is said to sometimes present several characters common to appendicitis when of the subacute variety. The point of invagination is usually the cæcum; the abdomen is distended and there is a tumor. But the age of the infant, the evidence of strangulation, and the bloody stools, together with the extreme rarity of the lesion, should seldom leave much doubt as to its real character. Fenger and Gerhards record a case of appendicitis in an infant 7 weeks old, and Matterstock had seen it in one of 6 months, both presenting features in common with intussusception. Gordon speaks of intussusception being more common in "first infancy" before dentition and says that appendicitis steadily increases in frequency from the second to the fifteenth year.

Typhoid Fever.—Typhoid fever in children is well known to pursue an atypical course and occasionally may be mistaken for appendicitis. Warren tells us that in those mixed cases presenting complex clinical features we cannot rely on Widal's test. Diarrhea is not an uncommon concomitant of appendicitis and in both iliac tumefaction and tenderness are generally present.

So far he has been able to derive but little if any assistance in the differential diagnosis of local or general disease by examination of the blood microscopically, except perhaps in paludal affections. The presence of the leucocytosis, however, has been supposed by some to establish the evidence of pus formation in febrile conditions of the system.

Various innocuous types of typhlitis and appendicitis are very common in early life, but though there is at this stage an absence of many complex pathologic conditions found only in the adult, even in childhood and infancy there are numerous diseased states that in their general features and most pronounced symptoms are quite identical with appendicitis.

It is of the greatest importance in young children that we shall closely look to the state of the bladder, which becomes enfeebled early and is liable to over distension, when far greater agony and danger may arise than from the condition which gave rise to it. In fact, it may of itself impart an aspect of forlorn hope to a case of appendicitis otherwise perfectly harmless.

TYPHOID BACILLURIA.

J. C. LEWIS (*Edinburgh Med. Jour.*, Sept. 1901) writes in part as follows : There may be no symptoms to call attention to this condition, and unless the physician is aware of this and on the lookout for the condition it may be present without recognition. This is specially true during convalescence, when all is going well and nothing occurs to excite suspicion. On the other hand, there may be symptoms which should at once direct attention to the urine. In a considerable proportion of cases pyuria is present; the pus is not necessarily present in large quantities, but if the urine be examined microscopically, pus cells as well as bacilli are present. In these cases the urine is faintly acid, certainly not alkaline, and contains no sediment and no albumin, or such a small quantity as to render its recognition a matter of delicate testing.

This is the condition which may be regarded as typical typhoid bacilluria; there is little or no frequency of micturition, no discomfort in the region of the bladder; the urine is acid when freshly passed and contains large numbers of typhoid bacilli in pure culture, along with some pus cells and no albumin.

If the fresh urine be transferred to a test-tube and held up to the light it is seen to be very slightly turbid throughout and if the tube be shaken a peculiar "shimmer" is seen, such as is sometimes noticed in a broth culture of certain organisms after a few hours' growth. A different type of the disease is occasionally met with in which the urine is very cloudy, thick with urates and pus, but seldom alkaline in reaction; the typhoid bacillus may be present in pure culture, but usually there are other organisms also present, notably the B. coli communis. This form is accompanied by pain and discomfort in the bladder, frequency of micturition, and is a cystitis with its usual phenomena. There is often albuminuria, and the shimmer is present.

Onset and Duration.—Typhoid bacilluria is rarely present in the early stages of the fever; it may come on in the second or third week, not usually before the third week, and may then continue for a varying length of time; sometimes it only lasts until a few days after the temperature has become normal, or it may persist for several weeks during convalescence, or even months after the illness commenced.

If its duration does not long exceed the period of fever, the organisms disappear from the urine very rapidly, being present in large numbers one day and entirely absent a few days later. On the other hand, the bacilluria may not begin until convalescence is progressing and may then last a long time.

The urine in typhoid bacilluria is in fact a culture, more or less pure, of the B. typhosus, which is present in enormous numbers. From 5 to 170 millions are reported as present per cc., and the cc. being little more than a quarter of a teaspoonful, the number passed per diem is prodigious.

The condition is believed to arise in the escape of a few organisms through the kidney and their multiplication in the bladder. They have been found in the glomeruli of the kidney, but the balance of experimental evidence is in favor of the view that some breech of excretory membrane is necessary for their escape and that there is no true elimination by the kidney.

Infectivity.—Proof that the typhoid bacillus is excreted in the urine in a condition capable of infecting other persons has been very definitely forthcoming. Picture to yourselves a khaki-clad warrior returned from South Africa to his village home, after a severe attack of fever, micturating in the privacy of his own garden, the drainage from which was thoughtfully directed into a well water supply. An epidemic breaks out in the houses supplied by this well and an alien and virulent B. typhosus finds a suitable environment for its ravages.

The evidence directly connecting the outbreak with the soldier's return is circumstantial and probable, if not actually proved, but actual proof of the infectivity of typhoid bacilluria is, like the toys, "made in Germany." Petruschsky relates the case of a nurse who contracted the disease by drinking out of a drinking glass which a patient, then suffering from bacilluria, had in an urgent moment used as a urinal.

Frequency.—Concerning the prevalence of the bacilluria there is much difference of opinion, some observers finding the bacillus present in all the enteric urines examined and others in very large percentages; other observers have failed to find them in any case examined, and the truth is very hard to find. The dubiety is due to the similarity which the typhoid bacillus bears to certain other organisms, especially that very ubiquitous organism, the B. coli communis.

All the early observations are ruled out by the fact that the distinguishing tests between these organisms have only been recently perfected. Horton Smith in London, and Richardson in America, whose observations are worthy of credence, on account of their careful bacteriological execution, agree in stating that 25 per cent. of cases of enteric fever show typhoid bacilluria. I have no doubt that they are correct as to their cases, but I think that even a smaller percentage may be found correct in other cases.

Petruschky's results give a percentage of 6; he found it three times times in fifty cases and his work aiso is bacteriologically indisputable. Carver met with no instance of it in sixteen cases, and others report varying percentages.

I have recently examined forty-five cases occurring in the Edinburgh City Hospital, involving a large number of specimens,and found the condition present in only one of the forty-five. The explanation appears to me to lie in the gravity of the cases investigated. Enteric fever in London has a higher mortality than in Edinburgh. and typhoid bacilluria is certainly more often associated with grave attacks,even though non-fata than with mild ones. If all the mild cases were examined as well as the severe ones I think the percentage would not exceed 10 per cent.

A SIMPLE METHOD OF REMOVING POST-NASAL POLYPI.

ALEX. FRANCIS (*Australasian Med. Gazette*, Brisbane, July 20, 1901) recommends the following plan: Pass a small soft-rubber catheter, to the end of which a piece of silk is attached, along the floor of the nostril on the affected side. Seize the end of the catheter as it emerges from behind the palate with a pair of forceps; cut the silk, and retaining it, withdraw the catheter. Tie the mouth end of the silk to the end protruding from the nostril. Repeat the operation, only make sure that the catheter this time passes above the neck of the polypus. Release the end of the second silk and withdraw the catheter. Then tie together the two mouth ends of the silks and draw gently on the nasal ends. It is well to see that the loop thus made passes up well against the side of the pharynx to which the polypus is attached in the nose. We thus get a silken thread round the pedicle without having interfered with the polypus in any way. Next heat the last inch of a long piece of snare wire to take the temper out of the steel; make a small eyelet in the end and tie on one end of the silk. By gently pulling on the free end of the silk and easing the wire into the nose, the wire is passed round the pedicle; thread the wire ends into a Jarvis snare, and slowly wind off.

The only painful part of the operation I found was pulling the stiff wire round the bend at the pedicle, but by taking the temper out of the end of the wire as I have suggested, the transition from silk to wire is not noticed.

A CASE OF CONGENITAL SYPHILIS.

D. S. HANSON (*Cleveland Med. Gazette*, Sept., 1901) reports the following case: November 29, 1899, I attended Mrs. L—— in confinement, this being her second child, the first one living and healthy. The father died of typhoid fever five months before the birth of her last child. I had personally known both families and had been their family physician for years and never had any reason to suspect syphilis in either family further than the fact that the father's mother, a woman about 40 years of age, had an attack of psoriasis that resisted all treatment until full doses of iodide of potassium were used, when her skin cleared up like magic. This lady absolutely denied all acute or secondary syphilitic lesions, and her mother never showed any signs of this disease; her father I never saw; her children are not syphilitic, or at least no signs of this disease have ever been apparent.

This baby began having snuffles when about a week or ten days old, and at twenty days the nose was much obstructed and child had a weasened wrinkled appearance characteristic of hereditary syphilis—no rash on skin. I prescribed mercury with chalk, gr. ¼ twice daily, with oleate of mercury 2 per cent. solution in liquid vaseline locally, with rapid improvement, and after a few weeks' treatment child appeared normal and has since developed well. Iodide of potash was continued some time after course of mercury.

The interesting feature here is the matter of heredity, no syphilis being present in family excepting the tertiary lesion of child's grandmother, the father of the child never having suffered from the disease and the mother never having had any trouble pointing toward this disease.

A CASE OF MENINGO-ENCEPHALOCELE TREATED BY EXCISION OF THE MASS.

ANDREW FULLERTON (*Brit. Med. Jour.*, June 22, 1901) reports the following case:

The patient, a healthy little girl, was brought to the Hospital for Sick Children, Queen Street, Belfast, at the age of 3 days.

State on Examination.—There was found a round, softish, opaque, fluctuating swelling, rather less than the size of the patient's head, in the occipital region, becoming tense when the child cried. There was no pulsation to be detected. On pressure over the tumor the anterior fontanelle bulged. The pedicle of the mass was situated between the external occipital protuberance and the foramen magnum and was about 1½ inch in diameter. The openings in the occipital bone could not be very definitely defined. There was a small cicatrix on the most prominent part of the tumor. A little ecchymosis could be seen over the convexity, evidently produced during parturition. The skin was of normal color, fairly thick, and devoid of hair. Hair was, however, abundant round the pedicle and at the base of the tumor; there was a "post-anal dimple" in the coccygeal region. The child was otherwise strong and healthy looking. There was no history of congenital malformation in any other member of the family. The mother was very anxious that something should be done to relieve the deformity, being quite satisfied to take the risk of any operation that might be decided upon. Accordingly, when the child was three weeks old, and after consultation with several of my colleagues, the following radical measures were adopted:

Operation.—On February 5, 1901, under chloroform, an elliptical incision was made round the neck of the tumor down to and including the dura mater, which was here intimately adherent to the skin. When one-half of the incision was made a finger was introduced and brain matter of the size of a small hen's egg, covered by arachnoid, was discovered. A considerable quantity of cerebrospinal fluid escaped from the meningocele portion. The projecting brain with its covering of arachnoid was now rapidly removed with scissors. The child at this stage developed alarming symptoms, becoming pale, with blue lips, and gasping in frequent respirations. The skin incision was therefore completed as speedily as possible and the edges of the wound brought together with silkworm gut sutures so as to close over the opening in the skull, which was large enough to admit the finger readily, and through which more brain tended to protrude. The bleeding was not considerable and was easily controlled by pressure. Sterilized plain gauze was applied to the wound and the whole thoroughly bandaged. A few drops of diluted brandy were placed in the child's mouth and soon the patient's condition began rapidly to improve. The breathing for some time after the operation was of the Cheyne-Stokes type. This, however, soon passed off; the pulse became fuller and more regular.

Progress.—The subsequent history of the case was for four weeks uneventful. The child's general condition became excellent. Cerebrospinal fluid leaked more or less for about a fortnight and then ceased. Internal squint, apparently of both eyes, developed on the day after the operation but entirely disappeared within a week. The wound healed rapidly with the exception of the upper part where the flaps did not fit accurately and where healthy granulation took place.

On March 1st, however, when the child was brought to the hospital it was found to have acute bronchitis; from this it died on the following day. A post-mortem examination was not allowed.

The occurrence of bronchitis was very unfortunate as the child looked extremely well, with the wound almost entirely healed, two days before the chest symptoms showed themselves.

The excised portion of brain was examined by the pathologist to the hospital; he found it to be occipital lobe.

SANITARY RULES TO GOVERN BARBER SHOPS.

The Health Board of San Francisco, Cal., recently sent the following rules to the supervisors to be adopted as an ordinance, and they will also be submitted to the State Barber Examiners for approval:

Mugs and shaving brushes shall be sterilized by immersion in boiling water after every separate use thereof.

Razors shall be wiped with alcohol both before and after they have been used.

Hair brushes known as "sanitary brushes" must be used after first being sterilized.

Razors strops must be kept clean and never wiped off with the hand or blown upon with the breath.

A separate clean towel shall be used for each person.

Barbers shall not blow away with breath any hairs after cutting, but use a towel or bulb or hairbrush.

Barbers shall keep their finger-nails short-cut and clean; alum or other material used to stop the flow of blood shall be so used only in powder form and applied on a towel.

The use of powder-puffs, finger-bowls and sponges is prohibited.

No person shall be allowed to use any barber shop as a dormitory.

All barbers' instruments must be disinfected after using.

These rules shall be placed in a conspicuous place in the shops.—*American Medicine*, Aug. 31, 1901.

GELATIN AS A HEMOSTATIC.

Gebele (*Münchener Med. Woch.*) as a result of his experiments on patients and on animals, finds that gelatin exerts its greatest hemostatic action only when hemorrhage has proceeded so far that at least 20 to 25 per cent. of the entire blood of the individual has been lost. As a matter of fact in this condition the blood always coagulates more readily than when present in normal quantity. The percentage of gelatin used is 2 for subcutaneous and 10 for local use, and the solution should be warmed to 37° or 38° C.—*American Medicine.*

DIPHTHERIA COMPLICATING TYPHOID FEVER—REPORT OF A CASE.

J. M. Mason (*American Medecine*, Aug. 31, 1901) reports this case, which came under his observation in October, 1899:

A. M., white, female, age 6, after several days of malaise, developed fever, headache, enlarged spleen and other typhoid symptoms. No malarial organisms were found in the blood, and a probable diagnosis of typhoid fever was made, as one member of the family had but recently recovered from a typical attack.

On the second day of my attendance some complaint was made of the throat, and on examination a small patch was observed on the left tonsil. By the next morning the other tonsil was involved and the patch had increased in size.

A culture revealed Klebs-Loeffler bacilli in pure culture, and 2,000 units of antitoxin were administered. This injection was repeated in eighteen hours with the result that the patches began at once to disappear and in four days were entirely gone.

The case then ran a rapid typical typhoid course, with high temperature, rose spots and the other classic symptoms, with an uneventful recovery.

ONE HUNDRED SUCCESSIVE MASTOID OPERATIONS.

E. W. Pyle (*Archives of Otology*) reports a series of cases the main features of which are summed as follows: The children, numerically four less than the adults, furnished three times as many acute cases; the adults three times as many chronic cases as the children; illustrating that the greater number of mastoid inflammations sooner or later demand surgical interference. Thirty-seven cases of sub-periosteal accumulations and eleven adults giving evidences of having had cortical perforations, showed clearly the insufficient efforts nature had made to repair, as they had finally to succumb to operative necessities. Forty-five acute cases furnished 33 per cent. of the intracranial complications, mostly in children. and all the patients lived. Fifty-five chronic cases furnished 66 per cent. of the intracranial complications and four patients died; illustrating the value of normal periosteums and the phagocytic property of the white corpuscles to resist pathogenic invasion, and specializing the importance of prophylactic treatment. Four cases were operated upon, perhaps too early and ill-advisedly, but beyond the possibility of a doubt ninety-six would have been vastly benefited by earlier operative procedure.—*Medical Record.*

THE TREATMENT OF HYSTERIA.

Pearce Bailey (*Medical Record*, August 24, 1901) remarks: From all points of view hysteria is a very troublesome affection to deal with. One has to handle the families of hysterical patients with gloves. They are very loath to acknowledge that a relative of theirs can walk but won't, can see although he thinks himself blind, or has no organic basis for the exaggerated symptoms he presents. They want medicines to be administered, they rebel at the suggestion of isolation and they soon tire of a doctor who fails to cure. On the witness stand also hysteria offers many perplexities to the expert, With a full desire to be fair, the medical witness if he is for the plaintiff, has difficulty in presenting his statement in a way to convince the jury that the plaintiff, although he has really nothing the matter with him, is a sick man and not an impostor. When, on the other hand, the medical witness is retained by the defendant, the jury is prone to discredit testimony which maintains that physical deformities can depend merely on idea: for the plaintiff is generally brought to court and is almost sure to present the acme of all the symptoms he has ever had. The hopes for fair settlement are almost none, when, as often happens, the medical experts have failed to recognize the nature of the disease, and testify to all manner of impossible organic conditions.

THE FUNCTION OF MINUTE RESEARCH IN BIOLOGY AND MEDICINE.

In order to illustrate the practical application of minute research in biology and medicine, Dr. Benjamin B. Wilson, in his recent address before the Yale Medical School, chose two problems which these sciences have been trying to solve—heredity and the origin of tumors—and gave his hearers a glimpse of what has been done in this field, together with a prophetic vision of what may be expected as the result of these investigations. In what follows we have endeavored to give a brief summary of the theme as gleaned from Dr. Wilson's address.

In studying the phenomena of cell-division it has been found that "the fertilized egg receives the nuclear material in exactly equal quantity from both the parents, in the form of rod-like bodies, known as chromosomes, that are identical in number, form and size in both male and female. Our researches on cell-division are converging with ever-increasing probability to the conclusion that the paternal and maternal materials contained in the chromosomes are, or at least may be, equally distributed by division to all the cells of the body, whatever be their structures or functions. In other words, every cell may thus receive nuclear material from both parents, and thus bear within itself the germs of the hereditary predisposition of both." Further studies are necessary in order to establish this conclusion completely. When this has been done we may understand how mental and physical characteristics have been handed down from parent to offspring on both sides from generation to generation.

As regards the origin of tumors, Dr. Wilson quotes Prudden, who, in a recent article (*Medical Record*, March 10, 1901), has told us that in the study of the cell itself lies the elusive answer to this question. Experimental studies with cells under artificial conditions have shown how unfavorable influences may sway the process of growth and differentiation, and it has even been found that the unfertilized egg may be goaded to complete embryological development by chemical stimuli. Again, under certain chemical conditions, the egg "as it were, loses control of itself and gives way to a course of riotous living, producing, not a normal embryo, but strange and monstrous forms." Here we seem to be hot on the trail of the cause of tumors.—*Medical Record*, Aug. 24, 1901.

THE MALARIA EXPEDITION IN AFRICA.

A report has been received by the Liverpool School of Tropical Medicine from Major Ross, regarding the work of the Malaria Commission at Freetown, Sierra Leone. The purpose of the commission was to extirpate as far as possible the malarial mosquito and to study the results of extirpation upon the prevalence of malaria. In his report Major Ross says that seventy-four men are constantly at work draining away the pools where anopheles breed. Within ten days after work was begun several of the worst streets in the town, formerly full of anopheles puddles, had been leveled and drained. Another gang of seven men, with carts, was engaged in destroying mosquito larvæ in water receptacles in the houses, and in carrying away cans, broken bottles, old buckets etc., in which the insects breed. They were clearing about forty houses daily and carried away about ten carloads of old pots every day,of which about one-third formerly bred mosquitoes. This was regarded, however, as only preliminary work, the greatest task being to dissipate the pools of water left in the dried-out beds of streams after the rainy season closes, and which are the most prolific of all hatching places for mosquitoes.—*Medical Record*, August 31, 1901.

A CASE OF ACTINOMYCOSIS HOMINIS.

Futterer (*N. Y. Med. Jour.*) reports this case: A macroscopical diagnosis between actinomycotic and tuberculous peribronchitis is generally considered to be impossible,but it seems to me that it is possible,and not even difficult, if the peculiarities of both conditions are very well considered.

The atinomycotic peribronchitis appears in fresh infections on cross-sections of small bronchi in the form of sharply defined sulghur-yellow rings, with clear, round outlines, against the unchanged parenchyma of the lung which surrounds it and above which it is elightly prominent. The process has but little tendency to involve the lung substance, which becomes affected very late, if at all. Even microscopically it can be seen that the alveoli next to the peribronchitic area are unchanged, while occasionally a small nodular prominence of the peribronchitic ring may press against them.

The cut surface of the yellow ring is quite even and during its further development it shows a decided tendency to grow toward the center of the lumen of the bronchus, which at last becomes entirely occluded. It is also of the very greatest importance to note that the very youngest as well as the oldest peribronchitic areas have the same sulphur-like color, while in tuberculous peribronchitis the color is very variable indeed, and so long as there is no caseation, it is not yellow at all, but gray or redish-gray. But even when there is caseation the yellow color has a more grayish tinge and is not uniform in quality. The tuberculous peribronchitic areas project above the surrounding lung tissue; they have an uneven surface and irregular outlines. There is not the pronounced tendency to grow centrally and close up the lumina, but on the contrary, the process is very prone to spread peripherally, and an early affection of the surrounding lung tissues is the rule.

The tuberculous infection generally affects the apices first, but actinomycosis prefers the lower portions of the lungs; while this may also be taken into consideration it will be of less value than the previously described peculiarities of both processes.

DEATH DUE TO HYPERTROPHY OF THE THYMUS.

Taillens (*Revue Médicale de la Suisse Romande*, June 20, 1901) sums up his conclusions of a study under this title as follows:

1. In certain cases hypertrophy of the thymus can be a cause of death.

2. The mechanism of this accident varies as it follows the convulsive form, producing sudden death by its action on the heart, or the compressive form, which acts slowly by asphyxiation.

3. In the convulsive form treatment is useless, since the symptoms occur so rapidly that there is no time to act. In the compressive form medical treatment is useless and even intubation or tracheotomy has proven futile. The only case definitely diagnosticated and cured by operative procedure—Siegel's—suggests a rational plan of treatment of this form (opening of anterior mediastinum and suture of the gland to the substernal fascia).

4. The pathological importance of hypertrophy of the thymus may be very considerable, especially in legal medicine, in which death has been wrongly attributed to negligence or criminal intent. (Cases cited by Grawitz and Ramoino). It is possible that in rare cases the thymus may be at fault when death is attributed to goitre, or in some cases in which it is impossible to dispense with the tube after tracheotomy.

5. The expression thymic asthma does not seem to the author to be exact- The rapid convulsive form would be better designated under the name of cardiac death, or sudden death due to the thymus, while the slow asphyxic form should be designated as thymie tracheostenosis. These two designations would serve to emphasize the difference between the two forms and their different mechanisms, as well as to prevent the classification under the name thymic asthma of a number of affections which have nothing in common with the thymus gland.—*American Jour. of the Med. Sciences*, Sept. 1901.

PROGNOSIS AND TREATMENT OF HERNIA IN CHILDHOOD.

George Heaton (*Quarterly Med. Jour. for Yorkshire*, Aug. 1901) remarks: The variety and nature of hernia have a great influence on the prospect of cure. Umbilical herniæ in young children are the most amenable to treatment; almost without exception they may be completely cured by a well applied pad or truss, and it is only very rarely that anything more is required. Of course I do not include in these cases the congenital exomphalos where the umbilical cord is dilated into a sac at the navel. Such cases are only curable by surgical interference undertaken as early as possible. I have twice operated on such cases within a few hours of birth. For some years I have given up the use of the old-fashioned remedy in these cases, namely, a piece of cork or coin covered with flannel or leather and fixed to the navel with a binder. I now always advise a simple india rubber belt with a pad fixed to it which can be laced round the child's abdomen; it is easily cleaned, comfortable, cheap and effective. Under its use the protrusion soon gets smaller, and in the course of a few months usually disappears.

Femoral herniæ stand at the other end of the list as regards curability by truss. This class of hernia is fortunately comparatively rare in childhood. Even in female children one rarely sees a femoral hernia; the great majority of herniæ occurring in little girls being inguinal ones, and often due to some imperfection in the closure of the peritoneal canal, known as the canal of Nuck.

The social condition and amenability to treatment on the part of the patient and his friends is a factor of considerable importance in the prognosis. Without a persevering and intelligent cooperation on the part of the child's guardians we can hope to do but little in the gradual cure ot a hernia by truss. A careless, indolent mother will render our best efforts futile by her lack of attention to the child at home. There is a large class of parents who quickly tire of any systematic course of treatment unless it be rapidly followed by well marked improvement. Such people have not the patience necessary to insure success in the treatment of their children and are always willing—nay, even eager—to submit their offspring to the risks of operation rather than themselves assist in any method of cure which is a prolonged one.

In our treatment of infants and young children affected with hernia our first endeavor should be to discover if there be any general conditions present which may perhaps be exciting or keeping up the herniæ, and if so to remedy or remove them.

I do not think sufficient attention is usually paid to the state of the child's digestive organs in this connection. A flatulent condition of the stomach or intestine with irregularity in the action of the bowels will often be found, if not an actual exciting cause of the rupture, to be, at any rate. a potent factor in maintaining it. In rickety children particularly the accumulation of flatus and consequent distension of the thin intestinal walls, puts a greatly increased pressure on the inguinal and femoral rings.

A grain or two of salol given occasionally and a mixture containing some rhubarb and soda will frequently be of much assistance to us in our endeavors to keep up a troublesome rupture.

Bronchitis in children is a most potent cause of rupture and will enable a hernia where one exists to defy all our efforts to cure it. It is a great disappointment sometimes when one hopes that a rupture has been cured by a truss to find how an attack of whooping cough or bronchitis will undo in a few minutes the work of months.

THE PARASITIC THEORY OF CANCER.

BORREL (*Annales de l'Institut Pasteur*, vol. xv, 1901) gives an excellent brief review of the literature on the theory of the parasitic origin of cancer. He divides his work into three stages:

1. "Parasites" described by Neisser, Darier and others, and believes that their "parasites" were epithelial cells undergoing special changes.

2. "Parasites" of the type described by Thoma, Sawtchenko and others. These are intracellular bodies, round, single or multiple, occurring chiefly with carcinomatous epithelium of glandular type. These bodies show a superficial resemblance to certain stages in the development of coccidia. Borrel believes that these bodies arise from peculiar changes vhich occur in the attractive sphere and centrosome of carcinoma cells.

3. "Parasites" believed by some men to be blastomycetes. Borrel says that the men who believe in this theory have assumed that all sorts of cell inclusions with a circular outline are blastomycetes, while in fact the inclusions have no morphological likeness to blastomycetes, and the infinite variety of cell inclusions even in carcinoma cannot all arise in the same way. The objections to the blastomycetic theory are: the nodules produced in animals by inoculation with blastomycetes are, with the exception of two cases of Sanfelice (cf. *infra*), of mesoblastic type; most men, with decent asepsis in making cultures, do not obtain cultures of blastomycetes from carcinomata, and there is no evidence that yeasts are found within epithelial cells. Borrel analyzes Sanfelice's two "successful" cases and decides that there is no evidence that the tumors were due to the action of blastomycetes.

Borrel's own contribution is a demonstration of the fact that bodies morphologically identical with the "parasites" of cancer are produced in normal and carcinomatous cells by certain peculiar changes in the attractive sphere and centrosome. He employs special technique in hardening and staining tissues. In the testicle of guinea pigs the attractive sphere and the centrosomes of cells which are to become spermatozoa show stages of development in which they resemble the "parasites" seen in cancer cells. In the cells of carcinoma the attractive sphere with included centrosomes may give rise to exactly similar appearances. At times there comes a collection of portions of the sphere about each of several centrosomes, producing appearances like those seen in the "spore cyst" of various believers in the parasitic theory.

Hence, Borrel concludes that the so-called "parasites" are due to peculiar changes of the attractive sphere about the centrosome. He says that the theory of parasitic cause is attractive, but that at present there is no evidence to support any of the theories.—*American Journal ot the Medical Sciences*, September, 1901.

GALLSTONES.

M. H. Richardson (*Boston M. and S. Jour.*) says: Gallstones should be removed at the earliest favorable moment after the diagnosis has been made unless there are contraindications in other viscera or in the patient's general condition. By the earliest favorable moment is meant that period of time when there is no infection of the gall-bladder to contaminate the field, no impaction in the common duct to increase the difficulties and dangers of dissection, and no jaundice to induce hemorrhage or to impair the patient's power of recovery. In many cases the favorable moment follows recovery from the disturbances of a transitory biliary colic unattended by jaundice; in others it follows the disappearance of jaundice after passage of the stone; in others, the subsidence of fever and other signs of a biliary affection. The arguments in its favor are that the operation is, as a rule, easy and safe. and all stones are quickly removed; that the remote dangers of gall-stones (serious disabilities, grave emergencies and malignant disease) are either avoided or lessened; that if the diagnosis of gall-stones proves to be wrong, other lesions may be discovered and remedied, and that late operations upon gall-stones are as a rule difficult and dangerous. The arguments against the proposition are:

1. There is some danger in the operation, though it is but slight.
2. The diagnosis may be wrong, and the exploration unnecessary.
3. There is the possibility of hernia in the scar.
4. The gall-stones may recur.
5. Spontaneous cure may result.
6. There is also the possibility that after offending enough to prove the diagnosis, gall-stones may give no further trouble.
7. The last and decisive attack of biliary colic may have been caused by the last remaining gall-stone, exploration showing that none of them remain.—*American Medicine.*

PEDIATRICS

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Vol. XII. OCTOBER 15th, 1901. No 8.

ORIGINAL ARTICLES

TWO CASES OF CHRONIC HYDROCEPHALUS IN INFANTS TREATED BY TAPPING AND BY THE INTRODUCTION OF ASEPTIC AIR IN THE PLACE OF THE FLUID.

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THE induction of "artificial pneumocephalus," which was resorted to in the following cases, may lead to further developments in the treatment of chronic hydrocephalus. At any rate the method is worth putting on record in connection with the relief which it afforded to some of the symptoms and with the considerable reduction in the size of the head which was obtained in one of the cases.

Tapping the ventricles by means of a fine trocar has been carried out by various observers and many years ago by one of us, but only with partial and temporary benefit. The intracranial pressure is relieved by the escape of a certain amount of fluid but as the flow must stop as soon as the membranous portions of the cranium have ceased to be overstretched any further reduction of the cranial capacity can only be effected by some external pressure, such as that of an elastic bandage, which has practical objections. As a fact, the bulk of the fluid remains within the ventricles.

We therefore determined to modify the old operation in such a way as to obtain a complete evacuation of the fluid by allowing aseptic air to take its place. For this purpose, in addition to the Southey's canula and India-rubber tube acting as drain,a second Southey's canula was provided with a sterilized India-rubber tube, the free end of which was connected with the nozzle of a small glass syringe from which the piston had been removed and the broad end of which was plugged with cotton-wool after sterilization. The two trochars were then ready for introduction into the fontanelle with all aseptic precautions and with careful avoidance of the vicinity of the sinus, the site for the outflow puncture being selected at a short distance below that for the air supply, and too great a rapidity of outflow being guarded against by a regulating small screw-clip such as is used for feeding bottles.

The operation planned on these lines was successfully carried out, with the results anticipated, namely, a considerable output of fluid, a considerable reduction in the size of the head and the cessation of the pressure symptoms for the relief of which the tapping had been undertaken.

Case 1.—A male infant, C. M., aged 3½ months, was admitted on January 5, 1901, into St. George's Hospital, with a large head, but no history of fits or meningitis. The head was rather large at birth and slightly delayed delivery. It seems to have grown steadily, and during three weeks' attendance in the out-patient department its circumference increased from 21½ to 22 inches. On admission, the child, otherwise healthy, but helpless owing to the weight of the head, presented the advanced features of hydrocephalus—an expanded cranium, a diminutive triangular face, a flattened and broadened root of nose, shortened and stretched upper eyelids, depressed and rolling eyeballs with some nystagmus, all the cranial bones separated and an anterior fontanelle measuring 3 inches transversely. With the electric light the skull was found to be remarkably translucent. On January 7th lumbar puncture was performed by Dr. S. Vere Pearson, but only 2 ounces of fluid were obtained in the course of twenty-four hours. The mother being anxious for some effectual treatment the operation of "artificial pneumocephalus" was planned and carried out, and on January 25th it was skilfully performed by Dr. S. Vere Pearson, acting under the directions and with the assistance of one of us. The tubes were removed after remaining *in situ* twenty-six hours, while a little fluid was still escaping. The total output was 42 ounces of faintly opalescent faintly albuminous, bacteriologically sterile fluid of specific gravity 1004. There was marked collapse due to the rapidity of the outflow at first, and a temporary rise to 101° F., together with some irritability; but the general effect of the operation was decidedly favorable, as shown by the relief of the screaming, the diminution of the rigidity and the cessation of the vomiting, and there were no symptoms of meningitis.

Notwithstanding the admission of air, as shown by tympanitic resonance of the whole head, the size of the head was greatly reduced, the bones over-riding freely, the fontanelles becoming depressed and the integuments wrinkled.

The measurements were as follows:

	Before operation.	After operation.	Decrease.
	Inches.	Inches.	Inches.
Maximum circumference	21¾	20	1¾
Occiput to glabella	16½	13½	3
Mastoid to mastoid	14¼	12	2¼

One of the results of the operation was that the translucency of the head was almost entirely lost except at the vertex where the longitudinal sinus was still plainly outlined. For a few days moderate pressure was applied by means of elastic webbing but this method of treatment was of doubtful benefit and was not persevered with.

On February 2d, the head being still tympanitic, but having largely refilled with fluid, the operation was repeated in a similar way. Twenty-eight ounces were gradually drawn off in seven hours. This fluid was highly sanious in color until the red corpuscles subsided, when the supernatant part was of a rich, serous yellow. The specific gravity was 1010, and the albuminous coagulate on boiling amounted to a heavy, flocculent precipitate; the fluid was still sterile.

This time the child became somewhat blanched and very quiet; the pulse and respiration were irregular for a few days, after which there was apparently some meningeal irritation, as shown by slightly increased rigidity of the neck and tonic flexor spasm of the limbs.

On February 7th definite left facial paralysis was noticed, which was subsequently recovered from completely. The fluid reaccumulated again with considerable rapidity, although the head remained almost universally tympanitic, and on February 22d the operation was performed for the third time; 50 ounces were drawn off in ten hours. The fluid was faintly sanious, specific gravity 1008, and still sterile.

This was followed by more constitutional disturbance. There was active febrile movement (the temperature rising once to 104° F.) on the third and fifth days after the operation. In addition to the facial paralysis an external squint of the right eye made its appearance. The child, however, recovered to a great extent, losing both facial paralysis and squint, though not altogether losing its irritability nor the rigidity of the neck and limbs.

The fourth operation, on March 18th, was well borne, and for the first time it was considered justifiable to completely empty the head. Twenty ounces of clear fluid, of specific gravity 1011, was obtained in the course of thirteen and one-half hours. The after-symptoms were far slighter than on previous occasions. After this there was a notable improvement as regards the rate at which the head refilled.

The tympanites disappeared very slowly and was not finally gone till April 29th, an interval of forty-one days. The head, however, steadily enlarged, and on May 20th the measurements were: Maximum circumference, 20½ inches; occiput to glabella, 12⅓ inches; mastoid to mastoid, 13 inches; the general condition of the child was now fairly good, it was gaining flesh, and weighed 12½ pounds.

On May 21st the operation was performed for the fifth time, Mr. A. S. Morley taking the place of Dr. Pearson. The details were precisely as before except that the cannula connected with the air supply was inserted before the other, it being thought that by this means the entrance of air would be further facilitated. This result appeared to be obtained for the head was markedly tympanitic three-quarters of an hour after the commencement of the operation and there was considerably less falling in of the parietes than on previous occasions. The tubes were left in throughout the night and the head was again completely emptied. The fluid amounted to 42 ounces, and was quite clear, of pale straw color and of specific gravity 1010. Some vomiting occurred as the immediate effect of the operation, but beyond this there were no bad symptoms.

A sixth tapping was made on June 8th for the relief of the constant screaming. The tubes were left in for eight and one-half hours with a total output of 19 ounces of slightly sanguineous fluid. No complications followed except some vomiting the same evening and a slight rise in temperature two days later. As on previous occasions the screaming ceased and the child was obviously made comfortable.

The seventh tapping, which was preceded by a period of several days' discomfort and screaming, was carried out by Mr. Morley on June 22d in the same manner and with the same results as the previous ones—the child being pacified and apparently comforted by the operation and remaining comfortable until reaccumulation took place again. On this occasion much fluid was removed (48 ounces collected) and the two tubes were left *in situ* for a longer time (42 hours) than ever before. After this tapping we observed that the child moved his head rather more freely on the pillow without, however, making any attempt to raise it. But when the body was held vertical out of the bed or supported in the sitting posture, the infant was able to hold up its head without assistance. The aspect, general health, appetite and nutrition continued excellent, but the legs and arms remained slightly rigid and semiflexed and the infant remained motionless and passive, giving no evidence of any improvement in intelligence. The first tooth (left lower central incisor) was cut about this time, and the temperature was a little unsteady.

About July 10th the head had again become exceedingly heavy and its tympanitic area much reduced. On July 14th Mr. P. L. Mummery operated skilfully under the direction of one of us, and some modifications were made in the procedure, of which it is only necessary to mention those intended to favor the complete evacuation of the fluid. When the latter has practically ceased to flow on the second day the foot of the bed was slightly raised and the head inclined laterally so as to enable the end of the cannula to reach the remnant of the fluid. Dr. Fenton, who was present at the time of the operation, suggested utilizing as a suctional pump a piece of broader tubing which had been inserted in the length of the ordinary outflow tube. This method was applied with effect, particularly when the admixture of air bubbles with the escaping fluid showed that mere siphonage would no longer serve. The same device was used finally to draw a quantity of air through the two tubes and the intraventricular space. By this means the considerable drawing in and crumpling of the fontanelle, which had resulted on former occasions, perhaps from an insufficient air supply, were lessened.

The ventricles were probably relieved of the same amount (about 48 ounces) as on the previous occasion but only 28 ounces were collected. The specific gravity was 1010 and the fluid absolutely bright, of a light, straw-color. The tubes were left in thirty hours. This seemed to be the most successful of all the tappings, inasmuch as besides being quieted and comforted, the infant seemed to lose a little of the rigidity of the limbs at the time of the operation and subsequently. No complications followed.

The internal treatment in this case was limited to the administration of a few grains of bromide occasionally and of small doses of protargol (¼ gr. every six hours) from March 15th to April 3d; and it remains an open question whether this had any influence in slowing the rate of the transudation during the latter period of observation.

Summary of the Operation.—Eight tappings were performed between January 25th and July 15th. The table shows that the largest amount collected was 50 ounces, and this was probably the measure of the ventricular capacity in this case.

TABLE.

Tappings.	Ounces Collected.	Sp. Gr.	Color, etc.	Albumen.	Number of hours tubes left *in situ.*
Jan. 25.......	42	1004	Straw, sterile	Little	26
Feb. 2.......	28	1010	Blood-tinged, sterile	Abundant	7
Feb. 22......	50	1008	Slightly blood-tinged, sterile	"	10
March 18....	20	1011	Clear	"	13½
May 21......	42	1010	Straw	"	19 about
June 8.......	19	——	Slightly bloody	"	8½
June 22......	48	1010	Clear	"	42
July 14......	28 (more evacuated.)	1010	Clear straw	"	30

Special attention is drawn to the fact that, after the first tapping, the fluid lost its cerebro-spinal character and assumed rather the character of serum, the specific gravity rising and with it the amount of albumen. The slight admixture of blood which sometimes occurred must have been due to the puncture of some vein.

Complications, etc.: Effect on the Temperature.—All the operations were free from septic complications, and after three of them there was no marked pyrexia. The ultimate effect, well shown on the first two occasions, was that the temperature, which had been unsteady, became, like the other functions, much more regular than previously. But after the other tappings transient pyrexia occurred, rising after the third to 104° as a maximum, while oscillations of 1½° continued until the middle of March. The tapping of March 18th raised the temperature to 101°, but this subsequently remained normal and subnormal, with an unexplained elevation between April 3d and 7th, until the following operation on May 21st. This time there was no elevation, but the temperature rose a few days before the next tapping, which was performed on June 8th. Two days and four days after this a rise to 102° occurred, but the temperature then became subnormal again. There was some discomfort and an oscillating temperature before the tapping of June 22d which slightly depressed the temperature for two days; on the fourth day (June 25th) it rose to 106° with a convulsive attack. soon dropping again to 102°, and next day to subnormal. The temperature, however. did not settle down till after the eruption of the first tooth on July 1st, after which it was quiet for three days and became again a little unsteady. The last operation, on July 14th, was followed by a slighter rise (to 102°) on the evening of the 15th and again to 100° on the 17th, dropping to 98° on the 18th and continuing subnormal afterwards.

The rise associated with a convulsive attack may have been partly connected with some peripheral irritation, perhaps of teething or perhaps simply gastric, as the child vomited clotted milk. The fact that no rise occurred on three occasions shows that with an improved technique and appliances and with the advantage of increasing experience the operation might be conducted without any complication.

The Effect on the Cerebral Condition.—As regards the brain, it is difficult to gauge the real value of the tapping owing to the disturbing effect of complications, such as the left facial paralysis which occurred after the second tapping and the right external squint, also temporary in duration, which occurred after the third, which indicates that slight lesions had probably been inflicted. The general rigidity and tenderness and the slight tonic contraction of the limbs which persist must be regarded as results of the original meningitis, and of the considerable compression which the brain had suffered. According to the mother's deliberate statement, made on July 21st, the present condition since the last tapping is a great advance upon the extreme stiffness and tenderness which obtained before admission, and this is corroborated by the observations of the head nurse during the early period of the patient's residence in the hospital prior to operation. Nevertheless there is still enough rigidity to seriously impede the progress and growth of the child by precluding movement and the opportunities for physical education. The mental condition remains a blank. Although the infant can hear and see, it takes no notice of its surroundings so long as left undisturbed. But so far as we can estimate the significance of fretfulness and screaming and of their absence the gain in well-being and comfort is very marked. As the fluid reaccumulates irritability and screaming return, but they are invariably allayed at the time of the tapping and for some days afterwards. The general health, in spite of the recurrent attacks of pyrexia, etc., has improved. There has been a slight but progressive gain in weight, and all the functions have remained normal throughout.

General Remarks on the Case.—The infant's present condition after eight tappings and the removal from the ventricles of an aggregate of about 11 pints of fluid must be described, on the whole, as satisfactory. Mechanical relief from pressure has for corresponding periods been afforded to the brain substance, which, as the child lies, must be subjected to great pressure in the dependent parts from the weight of the effusion and to considerable tension in other parts as well. The comfort derived from the operation is manifest and such as any untrained observer can perceive. If the brain is to be allowed to grow and develop this relief should be made continuous. Although the advantage has been only temporary and partial, nevertheless it has, in our estimation, been worth securing. We may call attention to the satisfactory state of the functions and of the general nutrition and body weight and to the normal though delayed cutting of the first tooth. It was observed after the first tapping that the hydrocephalic cry had given place to the normal "baby wail," and this was specially noticed after the last operation. Looking back for the adverse consequences, the collapse which was mentioned in connection with the first operation was clearly preventable and would have been avoided if the fluid had not been inadvertently allowed to escape with too great a rush. The temporary symptoms of ocular and of facial paralysis and of increased rigidity are consistent with the view that some transient irritation of the meninges had been set up. The muscular rigidity and tenderness, although now much less, still constitute the most troublesome feature as they preclude the advantage of movement. How far the case may continue to improve under this treatment, or some modified form of it, we cannot now foretell.

Case 2.—G. S., a male infant, aged 9 months, well nourished and healthy but for the rather large head, bulging fontanelle, prominent frontal bones and slightly Mongolian aspect, was admitted into St. George's Hospital on June 6, 1901, at the recommendation of Dr. Fenton, who had attended the child as an out-patient and had noticed an increase of a quarter of an inch in the cranial circumference during the last three weeks. The mother was healthy, intelligent and of good physique, but had suffered from hydrocephalus and presented in a slight but unmistakable degree the cranial features of the condition. The infant, born at full term without instruments, but after a difficult "dry" labor, had always been healthy and had never had convulsions or screaming at night, but had been subject to diarrhea for the last three months. The head was first noticed to be larger than normal at the age of 2 months and increased in size slowly up to one month ago, when the increase was much more rapid.

On admission the general aspect was healthy, but the head was square without much facial disfigurement except the characteristic expansion and flattening at the root of the nose. The anterior fontanelle was about 2 inches square, the front parietal suture open about 1½ inches, the interfrontal about 1 inch and the interparietal open about half way to the posterior fontanelle; the latter was closed. The frontal eminences were prominent, especially the right eminence; the brows were somewhat raised but not to the extent of raising the lower eyelid.

On June 10th the head was tapped by Mr. A. S. Morley, in the manner described in case 1. The cannulæ were inserted in the right sphenoparietal region and left *in situ* for nine hours; 6½ ounces drained away. The fluid was slightly blood-stained, but at two distinct intervals some clear fluid ran for a while. There was some tendency to collapse a few minutes after the first 2 ounces had escaped, perhaps because the head had been lowered to favor the flow, but the patient rallied well with brandy and strychnine. He slept comfortably during the night without any screaming such as had occurred during the previous nights, and no complications ensued. Tympanitic resonance on percussion was obtained over the greater part of the vertex and forehead, and for nine days slight oozing persisted. A powder containing 1/16th grain of nitrate of silver was ordered to be taken every six hours.

The infant was readmitted for observation in the middle of July, but as it proved to be active, bright, apparently intelligent, carrying its large head boldly, and as there was no bulging of the fontanelle it was deemed inadvisable to repeat the operation. Moreover, the fontanelles were becoming rapidly smaller, although the head itself seems to be rather larger.

Remarks.—In this case the removal of the fluid and the introduction of air seemed to have only a beneficial effect and reaccumulation of fluid has not taken place. It may be noted that nitrate of silver was prescribed concurrently with the operative treatment and was administered for nine days subsequently. Conceivably this may have had a share in the favorable result. At any rate the case suggests that sometimes the operation might be performed with the hope of giving permanent relief.

PROVISIONAL CONCLUSIONS.

The provisional conclusions warranted by our limited experience are few:

1. With due precautions the fluid of chronic hydrocephalus may be completely evacuated from the yet unclosed skull of infants, and aseptic air may be allowed to take its place. This operation may be repeated without detriment and with scarcely more risk than belongs to the usual method of paracentesis.

2. In favorable cases of moderate effusion, such as case 2, a single operation may suffice. Continued oozing from the puncture for a few days after the removal of the tubes is not unfavorable.

3. In cases of considerable effusion an obvious indication is to relieve the brain from the weight and from the pressure of the fluid. The evacuation is facilitated by the introduction of aseptic air. In case 1 this treatment has proved to be of decided advantage. By a timely repetition of the operation a hydrocephalic infant might be enabled to carry the weight of the head, and if the treatment were begun sufficiently early, permanent damage to the brain tissue might be averted and a normal development might perhaps ensue.

3. In large heads, while hydrocephalus persists, a considerable splashing sound is readily obtained. There is obvious risk in eliciting this sound by forcible succussion, and for the same reason any abrupt movement of the head should be avoided.

Discussion.—See PEDIATRICS for Sept. 15th, 1901.

TREATMENT OF TINEA.

In tinea involving the scalp in children the following is recommended as a hair wash:

℞	Tinct. cantharidis	ʒiss
	Tinct. capsici	ʒiss
	Olei ricini	ʒii
	Eau de Cologne, q.s. ad	℥iii

M. Sig.—Use as a hair wash.

Or:—

℞	Sodii boratis	gr. xl
	Spts. camphoræ	ʒi
	Glycerini	ʒii
	Aq. aurantii, q.s. ad	℥iii

M. Sig.—Use as a wash to the scalp.—*Jour. A.M.A.*

RESULTS OF TENDON GRAFTING IN INFANTILE AND SPASTIC PARALYSIS.

By A. H. Tubby, M.S., F.R.C.S.,
London,
Surgeon to the Westminster, Evelina and National Orthopedic Hospitals.

AT the meeting of this Association (1898) our President, Mr. Eve, read a paper on the subject of tendon grafting for infantile paralysis, and gave details of four cases in which he had carried out the procedure. In that paper he laid down certain rules, which further experience has shown to be of the greatest value.

He remarked that some one group of muscles might at least be possessed of a fair amount of power in order that the requisite force may be obtained; and cases of flail-like joint, in which all the muscles are paralyzed, are only suitable for arthrodesis. In selecting the muscle for grafting, that one should be chosen whose action is most nearly allied to that of the paralyzed muscle, or group; not only because such a muscle is nearest, but also because restoration of voluntary function is more readily obtained.

Again, before the operation we are considering is carried out, any faulty position of the foot, such as talipes cavus, will require attention.

Mr. Eve expressed the opinion that the improvement effected by this operation was brought about in a variety of ways. Where the action of the graft or functioning muscle is nearly allied to that of the paralyzed one which it reinforces, the patient is soon able to accomplish voluntarily the new movement. Other factors also come into play in furnishing the patient with a firm base of support, adjusted to the normal position; for the graft, or functionating tendon, acts as a supporting band applied, where it is most required, to the ankle and foot, and a selection of one or more of the contracted antagonists for reinforcing the paralyzed muscle while removing useless force from the antagonist, confers power on the paralyzed muscles.

The further objects of the operation are to avoid, as far as possible, the use of cumbersome and expensive apparatus, and to increase the nutrition and growth of the affected part. I have noted that the circulation improves and the warmth of the foot increases after the operation and in the winter chilblains do not often occur.

There can be no doubt that tendon grafting as an operation has a distinct future before it. The method of treating paralytic talipes which has been most usually carried out has been to disregard the existence of the paralyzed muscles and by tenotomy to lengthen and therefore to weaken the muscles retaining their action; and then having by this means brought the foot into position, to keep it passively in one position. Tendon grafting aims at distributing what power is left to the muscles around the joints and then by careful education and training of such healthy muscles in their new attachments, to bring them into a condition of exaggerated size, action and nutrition.

During the past three to four years I have done eleven cases of tendon grafting on the feet for paralytic talipes, the results of which I am able to report. Of these, four have been done for calcaneo-valgus; two for talipes calcaneus; one for equino-valgus; three for equino-varus, and one for calcaneo-varus. In addition, four cases of spastic paralysis, affecting the forearm and hand, have been operated upon by the method which I described in the *British Medical Journal* in 1898, which consists in the transplantation of the tendon of the pronator radii teres, with section of the flexor tendons of the wrist.

Taking the group of four cases, namely, calcaneo-valgus, a condition due to paralysis of the calf muscles and of the tibialis anticus, I find that the results have been good so far as the restoration of function is concerned in the paralyzed parts, and I briefly detail the cases and show some illustrations of the cases before and after operation and their present condition.

CASES OF TALIPES CALCANEO-VALGUS TREATED BY TENDON GRAFTING.

CASE 1.—I. F., aged 8 years, was admitted to Westminster Hospital on October 19, 1900, suffering from paralytic talipes calcaneo-valgus of the left foot, which had come on after a paralytic attack when she was 2 years of age. She had had no treatment for the condition until she came under my care.

When the limb was passively raised from the ground the front part of the foot hung helplessly pointed and everted, the sole was deeply concave, the heel was prominent and had the typical globular appearance of these cases, and the plantar fascia was contracted. The latter was divided and the sole of the foot unfolded, a process which took about four weeks. The muscles having been carefully tested, it was found that there was some power left in the tibialis posticus and normal power in the peroneus longus. It was therefore decided to graft the peroneus longus and the tibialis posticus into the tendo Achillis, which we accordingly done. The result is well seen in the illustration; the child can voluntarily raise the heel from the ground; the foot is of comely shape and she progresses with ease.

Case 2.—A second case of calcaneo-valgus was that of A. S., aged 7 years, who was admitted to the National Orthopedic Hospital on June 23, 1898. It was noted that the peronei acted well but the calf muscles failed to raise the heel at all. On July 1st the peronei were grafted into the tendo Achillis behind the external malleolus. On August 10th it was noted that there was good power of voluntary extension of the foot and when it was made the peronei could be felt to harden and the lower portion of the tendo Achillis to become tense; there was no valgus, and the foot was in excellent position; he could lift the heel off the ground and raise himself on his toes; for a time he wore a light steel apparatus so as to control the valgus, but this has since been discarded and the improvement maintained.

Case 3.—W. C., aged 3 years, admitted to the National Orthopedic Hospital on September 19, 1899, suffering from infantile paralysis of the left leg. When about a year old and after he had walked he had a fit. It was noticed on admission that the muscles of the left leg were generally wasted and the plantar flexors and invertors were paralyzed, while the dorsiflexors and evertors retained a moderate degree of strength. The right foot was not much affected but the sole of the foot was somewhat more hollow than natural and the balls of the toes were dropped. On October 28, 1899, the left peroneus longus was grafted into the tendo Achillis and the patient was discharged from the hospital on February 22, 1900. He was able to raise himself on his toes, but some talipes valgus persisted, which is controlled by a valgus pad and T-strap, and this is his present condition.

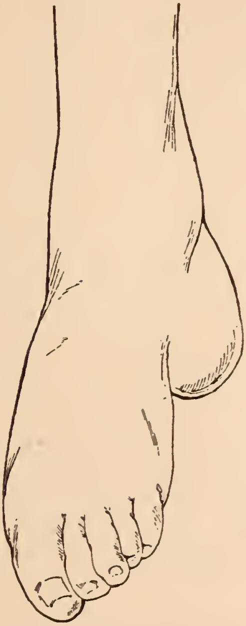

Fig. 1.—To illustrate Case I, showing a condition of paralytic talipes calcaneo-valgus, before treatment, in a girl aged 8 years. The foot and leg are hanging over the edge of a table.

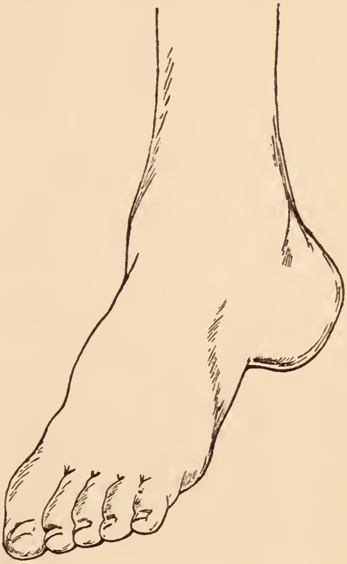

Fig. 4.—To illustrate the condition of talipes calcaneo-valgus in Case IV, before treatment.

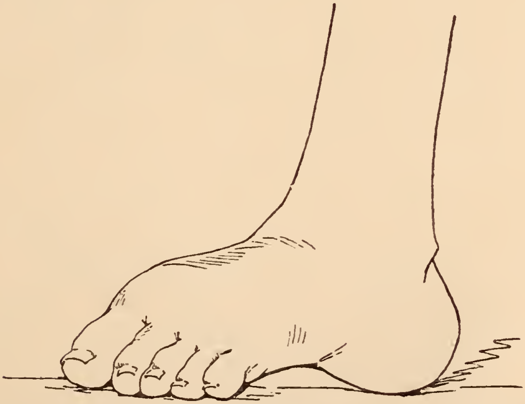

Fig. 2.—The same foot, before treatment, as in Fig. 1, and resting on the ground. The globular heel and excessive concavity of the sole of the foot are seen.

Case 4.—F. L., aged 4 years, was admitted to the National Orthopedic Hospital on February 20, 1900. The history was that a year before admission, when he woke up one morning, it was found that he could not walk although he had gone to bed well the night before. There was much wasting of the left leg, and the knee-jerk on the left side was not obtainable. The foot was everted, and there was good power in the peronei and the extensor communis digitorum. When the foot was brought to the middle line he was able to invert it slightly by the action of the tibialis posticus, although the tibialis anticus appeared to be paralyzed. The limb was half an inch short. On February 22d a transverse incision was made across the front of the ankle-joint, the extensor communis tendon found and split longitudinally and its outer half having been divided the proximal portion of this section was grafted on to the tibialis anticus. It was not deemed advisable to graft the peronei on to the tendo Achillis as the amount of calcaneus was not great. The effect of the operation was that he could raise the inner border of the foot and much of the valgus was overcome. When seen on July 18th of this year the result was very good indeed and fully justified the operation. The calcaneus had disappeared as the result of persistent massage and faradism of the calf muscles.

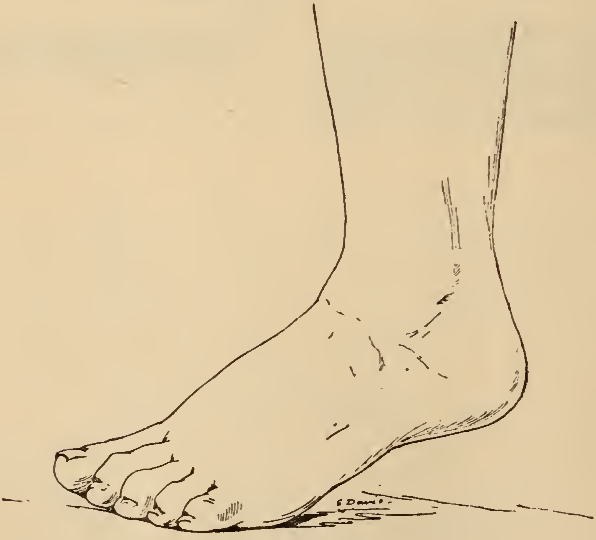

Fig. 3.—To illustrate the appearance of the foot in Case 1, nine months after the operation of grafting the peroneus longus and flexor longus pollicis into the tendo Achillis. The shape of the foot is good, and it will be noted that the heel can be lifted well off the ground.

Of these four cases of tendon transplantation the result is now seen to be good in three and fair in one. It is comparatively easy to overcome the talipes calcaneus, but unless special care be taken there is a residuum of valgus. This is often due to excessive action either of the peroneus brevis or of the outer part of the extensor communis digitorum, which, a few months after the operation, may be both seen and felt to be tense. I would therefore recommend that not only should the peroneus longus be inserted into the tendo Achillis, but the peroneus brevis should be divided or half an inch exsected from it. If it be moderately tense at the same or a subsequent sitting the outer half of the extensor communis digitorum should be grafted on to the tibialis anticus. By doing so the natural equlibrium of muscles around the ankle-joint is more nearly imitated.

CASES OF TALIPES CALCANEUS TREATED BY TENDON GRAFTING.

Pure talipes calcaneus is fortunately of rare occurrence, especially after infantile paralysis. But it is far more commonly seen as the result of dividing a contracted tendo Achillis for equinus and not maintaining proper control of the tendon after the operation. A case in point is the following:

Case 5.—R. B., aged 8, was admitted to Westminster Hospital on May 9, 1898. When the foot was allowed to hang, it presented the appearance of a Chinese lady's foot. The dorsum was extremely convex, the toes curved over, the sole of the foot exceedingly hollow and the heel was dropped, globular and elongated. At the back of each ankle was an elongated scar, where attempts had evidently been made to shorten the tendo Achillis after the faulty operation for equinus. The case did not present a promising appearance, and some time was consumed in unfolding the soles of the feet. In July, 1898, a longitudinal incision of about 4 inches in length was made at the back of each ankle, the peroneus longus tendon found in each case and divided just below the external malleolus and inserted into the posterior aspect of the os calcis. It was very difficult to identify the remains of the tendo Achillis; they were thin and membranous, having the appearance of fasciæ rather than of tendons. The wounds healed kindly, and the child was discharged from the hospital in October, 1898, being able to raise herself on her toes, although some pes cavus still existed, and the feet were not of a good shape. The calcaneus was markedly diminished and has remained so. But considerable difficulty has occurred with regard to the persistent tendency to the recurrence of the cavus.

Case 6.—T.V., aged 6, was admitted to the Evelina Hospital on August 25, 1898, with a marked degree of talipes calcalcaneus of the right foot, the result of infantile paralysis four years previously. The invertors and evertors of the foot were of equal strength and dorsiflexion was good, so that a longitudinal incision was made over the middle of the tendo Achillis and about 5 inches in length. By dissecting back the subcutaneous tissue well the tendons posterior to both malleoli were exposed and the peroneus longus and the flexor longus pollicis * were in good equilibrium, and it could be very readily pointed.

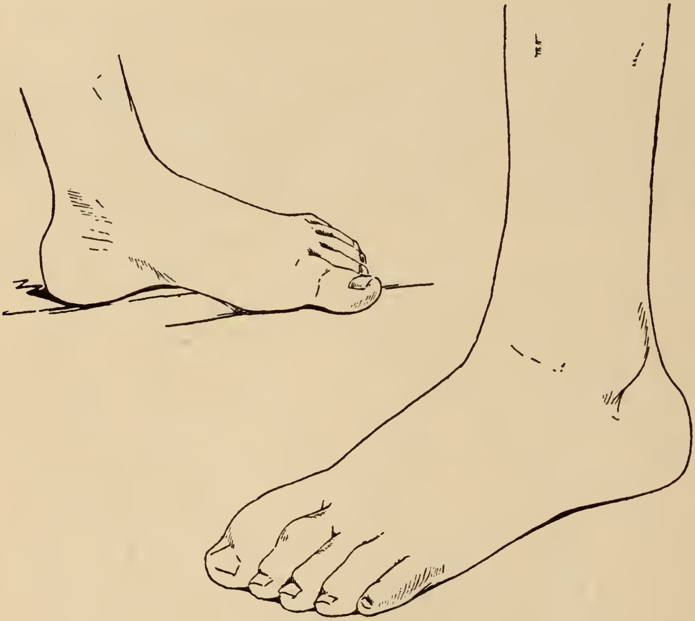

Fig. 5.—Inside and outside views of the same foot as in Fig. 4, and of Case IV, after treatment by muscle grafting.

In such a case as the last named, and wherever the condition of the muscles permits it, it is always better not to be

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* The flexor longus pollicis is a good muscle to use for this purpose when it is not paralyzed, for it contributes but slightly to the support of the arch of the foot, and the great toe has a short flexor in addition.

content merely with inserting a tendon from only the external or internal aspects of the ankle, but it is better if possible to reinforce the tendo Achillis by tendons taken from either side. Because, if for example the peroneus longus only be taken, and it be inserted low down into the tendo Achillis it will by the direction of the fibers be likely to produce valgus later, although relieving the calcaneus; that is to say, the balance on either side of the middle line should be preserved as far as possible.

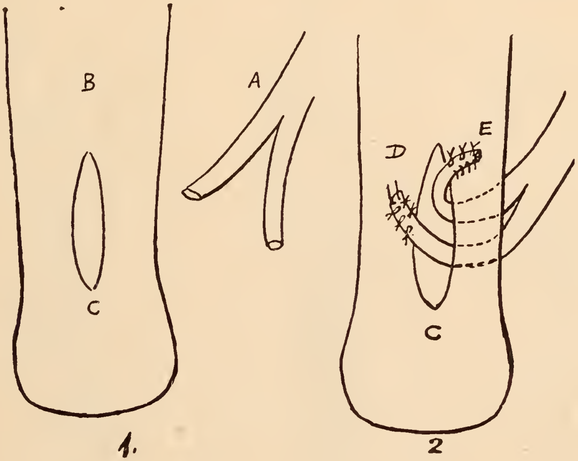

Fig. 6.—Views from behind of method of inserting a tendon into the tendo Achillis. A, Peroneus longus, to be inserted into tendo Achillis, B, through the longitudinal incision in the latter at C. The ends of the tendon A are seen split. They are then passed through C from before backwards, and firmly stitched down to the posterior surface at D and E.

A CASE OF EQUINO-VARUS TREATED BY TENDON GRAFTING.

Case 7.—C. L., aged 6½ years, was admitted to the National Orthopedic Hospital on August 29, 1898, suffering from infantile paralysis of the left foot, which was in a position of equino-valgus. The tibialis anticus and posticus were paralyzed, while the extensor proprius pollicis and inner portion of the extensor communis digitorum were affected to a less degree, but the outer portion of the latter seemed to act well, and so, too, did the peronei. The tendo Achillis was somewhat tight and the angle of dorsiflexion was just under 90 degrees. The sole of the foot was more concave than usual. On October 12th, some weeks after section of the plantar fascia, an incision 5 inches long was made along the inner and posterior aspect of the leg and the tendo Achillis was split along its whole length; the inner half was severed below the ankle, and brought round and stitched to the tibialis posticus. The remainder of the tendo Achillis was divided as well as the peronei. All went well, and when the boy left the hospital in

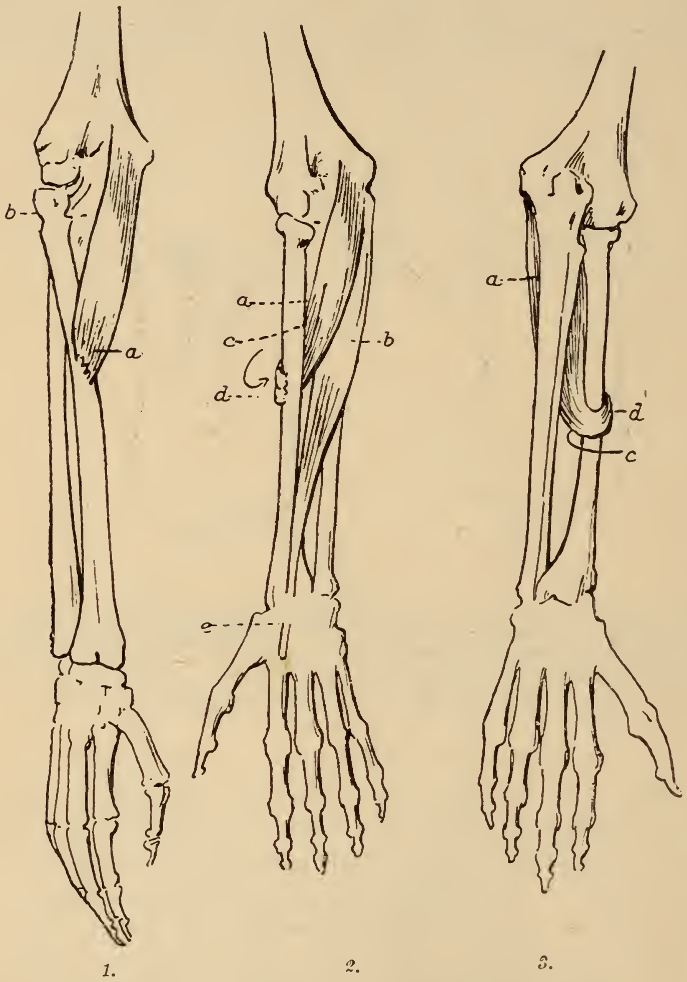

Fig. 7.—To illustrate the method of transforming the pronator radii teres into a supinator. *a*. Pronator radii teres, in *1* passing in its natural course to its insertion on the radius. In *2* the tendon has been detached and has been passed *behind* the radius to its outer side. *c* is the opening in the interosseous membrane through which the tendon is passed, and it is reinserted at *d*. At *e* the flexor carpi radialis has been divided. *3* is a posterior view of *2*, but in *3* the pronator radii teres is drawn too low down on the radius.

January, 1899, his foot was in capital position, but since then slight relapse has taken place and there is some valgus present. It is a matter for regret that a portion of the peronei tendons was not exsected or it would probably have been better to carry round the peroneus longus tendon into the flexor communis digitorum, as well as inserting the inner half of the tendo Achillis into the tibialis posticus.

CASES OF EQUINO-VARUS TREATED BY TENDON GRAFTING.

Case 8.—C. C., aged 2½ years, was admitted to the Evelina Hospital on July 6, 1898. He appears to have had an attack of infantile paralysis at the age of 9 months. He was a healthy-looking boy, but the right leg was partially paralyzed; this was especially so with the extensors of the toes. The foot was pointed and inverted, resting on the external malleolus. On July 22d a longitudinal incision about 3 to 4 inches in length was made at the posterior and outer aspect of the leg and the tendo Achillis and peroneus longus tendon exposed. The tendo Achillis was then split longitudinally for its whole length, and the gastrocnemius as far as the junction of its two heads. The outer part of the tendo Achillis was then severed transversely about an inch and a half above the ankle, and so, too, was the peroneus longus. The proximal part of the tendo Achillis and the distal part of the peroneus longus were then firmly quilted together; the remaining inner portion of the tendo Achillis was then severed so as to correct the equinus. For six weeks after the healing of the wound massage and faradism were applied; it was evident that the everting movement of the foot had been regained. The present condition is that the boy is able to walk about comfortably without any instrumental assistance, the only drawback being that the leg is 1 inch shorter than its fellow.

Case 9.—A. R. was admitted to the Evelina Hospital on January 5, 1899, suffering from paralytic talipes equino-varus of the left foot with paralysis of the peronei and partial paralysis of the dorsiflexors of the foot. The same procedure was adopted as in the previous case, but the tendo Achillis was onlp split for a short distance, the gastrocnemius not being divided longitudinally. The outer portion of the tendo Achillis was inserted into both the peroneus longus and brevis, while the inner part was divided transversely. The result is not so good as in the previous case, owing doubtless to the fact that the outer strip of the tendo Achillis was not detached sufficiently from the main body of the tendon. In these cases it is

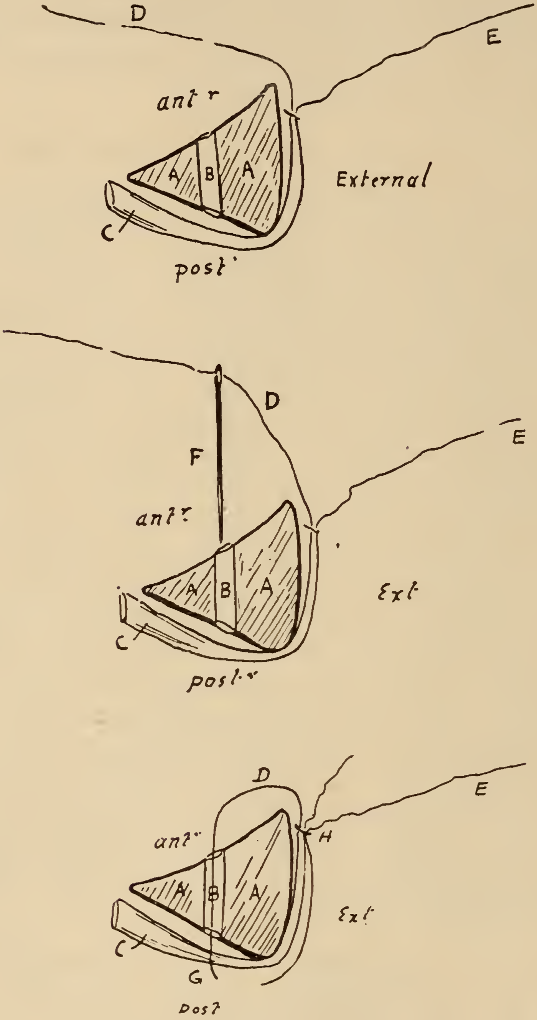

Fig. 8.—To show method of reinserting the pronator radii teres tendon into the radius, after the tendon has been passed behind the radius. A, A, section of radius. B, hole drilled through the bone from before backwards. C, tendon of pronator radii teres. D and E, ends of silk thread passed through detached tendon. F, needle threaded on D and passing through the hole B in the radius of the second figure, and through the tendon of the pronator radii teres at G in the third figure. G, position where the free end of the thread, D, is passed through the tendon as it lies behind the radius. H, spot where the thread D is finally knotted to E, and the tendon is bound down to the roughened outer surface of the radius at its new attachment.

essential to fully detach the outer belly of the gastrocnemius as well and so provide an entirely separate muscle.

Case 10.—D. O'G., aged 4½ years, was seen on December 6, 1898, suffering with infantile paralysis affecting the left leg. The foot was in a position of equino-varus and the muscles affected were the same as in the preceding case. The same procedure was carried out but the outer portion of the gastrocnemius and the outer portion of the tendo Achillis were freely detached by a longitudinal incision. For two years the foot remained in good position but the extensor communis digitorum recovered its power almost completely, so that the two outer tendons became tense and the foot acquired some valgus which will have to be corrected by section of the affected tendons. It must be remembered that long after an attack of paralysis the affected muscles continue to recover and may therefore upset the balance which has been obtained previously by tendon grafting. Particularly so is this the case with the extensor communis digitorum.

Tendon grafting for equino-varus has not been so satisfactory in my hands as for other conditions. It is possible that the outer half of the gastrocnemius and tendo Achillis is too powerful for conversion into an evertor of the foot, and it would doubtless be wiser to use either the flexor longus pollicis or the flexor longus digitorum, and pass either or both of them beneath the tendo Achillis into the peronei.

A CASE OF CALCANEO-VARUS TREATED BY TENDON GRAFTING.

Case 11.—W. H., aged 3, was admitted to the National Orthopedic Hospital in May, 1899, with some degree of calcaneus and of varus, the latter being mainly due to contraction of the plantar fascia. This was readily removed, and the calcaneus remained to be dealt with. The peroneus longus and flexor longus pollicis were grafted into the tendo Achillis and the result is very good.

Certain points in procedure may be alluded to; the first requisite is absolute asepsis, and the next point is the suturing material for the tendons. Catgut I have never tried, being deterred from doing so by the accounts of suppuration I have read of following its use, and it further seems to me that it is likely to become softened and therefore useless before the grafted tendons have become firmly fixed. I have used kangaroo tendon in thin strips, but the latter mentioned objection applies to this material also. The best substance I have found to be fine silk. This should be boiled once for half an hour, and then placed for seven days in a solution of 1 in 1,000 biniodide of mercury.

Where the tendon to be reinforced is of sufficient size it should be split longitudinally, the end of the reinforcing tendon brought down through the slit and firmly sutured into position. Another point of importance is that the foot should be held in the position it is desired to obtain while the tendons are being grafted, and when they have been sutured the reinforcing tendons should be felt to be quite tense. There are many other methods of grafting tendons but I know of none so secure as that I have mentioned. It is well to keep the foot at rest in the corrected position at least for six weeks after the operation to allow of firm union taking place, and every effort should be made to straighten the reinforcing muscle by massage and faradism.

It is not advisable to allow the patient in all cases to walk about with the foot quite free from support or assistance, at any rate for a time after the operation ;thus in calcaneus a toe-depressing spring is useful for a time. In paralytic valgus the foot should have a thickening along its inner border and in varus along its outer border.

TENDON GRAFTING FOR SPASTIC PARALYSIS.

While in paralytic affections we can arrive at a moderate estimate of the degree of strength and of weakness of the various muscles,in spastic affections the problem is more complicated, because such muscles are subject often to both tonic and clonic spasm dependent upon varying degrees of irritability of the cerebral centers; but certain cases of infantile spastic paralysis and, to a less degree, of cerebral diplegia, exhibit after a time fixed types of deformity arising from weakening of certain muscles with both contraction and contracture of their opponents. Such a fairly typical deformity is seen in cases of this nature in the upper extremity, a deformity which often renders useless the affected limb. I allude to the spastic contraction of elbow, wrist and fingers, with pronation of the forearm. If this condition has existed for some time there are two factors to be taken into consideration in applying any remedial measure. These are the (*a*) contraction of the muscles, and (*b*) of the ligaments. By the method which has been practiced by me, not only can the contraction of the muscles be overcome but power which, under the circumstances of the disease, is viciously directed, can be transferred in such a way as to make it an agent for useful motion. The contraction of the ligaments can subsequently be overcome by passive movements, once the muscular contraction and contracture have been remedied.

If we look at limbs affected in the way which has been mentioned, we shall note this point. The muscles which arise from the internal condyle and are mostly affected are partially flexors of the elbow, almost entirely pronators of the forearm and flexors of the wrist and fingers; therefore if they can be attacked the contractions are relieved and some of their excessive power is transferred, especially from pronation to supination. The operation which has been practised by me has been described in the *British Medical Journal* of 1898 and the procedure is there figured. The object of the operation is to transform the pronating power of the pronator radii teres into a supinating power, and the flexor carpi radialis may be treated in the same way, although, as a rule, simple division of it suffices. Briefly, the operation on the pronator radii teres is as follows:

An incision is made with its center a little above the middle of the forearm, as for ligature of middle of the radial artery. The inner margin of the supinator longus is defined, the radial artery and nerve isolated and pulled to one side and the tendon of the pronator radii teres is seen beneath. It is easily recognized among other tendons by the direction of its fibers, and as a rule, is broad and flat. It is now detached from the radius together with its periosteum, and the muscle itself is separated for about an inch and a half from its neighbors. The next step is to make an opening through the interosseous membrane as near to the radius as possible so as to avoid the anterior interosseous artery and nerve. The best method is to pass an aneurysm needle around the radius and as close to it as possible; if necessary, peeling off some of the periosteum on its posterior and outer aspects. The tendon is then drawn through the aperture and behind the radius to its outer side; but as the muscle is often a short one and the distance the transplanted tendon has to travel to its new insertion is greater than to its normal insertion, the opening in the interosseous membrane must be at a higher level on the forearm than that to which the usual course of the muscle corresponds. The next difficulty is to attach the tendon in its new position. The periosteum is roughened on the other surface of the radius at a point half an inch to an inch above the normal insertion of the pronator. A silk ligature with double end is then sewn on to the end of the tendon. A hole is drilled through the radius from before backwards, one end of the silk ligature is threaded with the needle, and the tendon of the pronator having been drawn around behind the radius, the needle is passed around the outer nose of the radius and then through the hole in the radius from before backwards and again through the tendon as it passes behind the radius and the ends of the silk ligature knotted. By such means the tendon is firmly fixed in its new position.

The flexor carpi radialis may either be divided by a transverse incision at the wrist joint, or it may be carried down through the interosseous membrane and fixed to the back of the radius in the same way as the pronator. For the flexion of the wrist and fingers it is sufficient to make an open transverse incision across the front of the wrist, isolate the median nerve and then divide the flexor tendons until the fingers can be straightened. By putting the hand up again in the faulty position leaving it there for ten days and then gradually putting it into the position midway between flexion and extension the required length of union in the flexor tendons can be accurately adjusted.

In a private case, that of D. R., a boy aged 6, upon which I operated in March, 1898, I obtained by this method a most excellent result, which has since persisted. The arm was previously practically useless for most purposes, but the boy can now use it for everything, even to the extent of writing and for such fine movements as picking up a pin.

In another case, a child aged 3, the subject of severe spastic paralysis, in whom the identical operation was performed two years ago, the process of recovery has been much slower, due partly to the resistance of the ligaments, and the case has been partially successful.

In a third case, a boy in Westminster Hospital, who was operated upon four months ago, the result so far is extremely gratifying, and the same remark may be made on a fourth case, in an adult, aged 22.

After the operation great persistence is necessary, both in massage and in passive movements, and the patient should be encouraged to use the arm. In children I find it very necessary to tie up the sound arm so as to ensure the use of the affected arm. There are doubtless improvements to be made in the operation, but I feel sure that the conception promises well.

So, to sum up briefly, of eleven cases of tendon grafting for paralytic talipes, six have shown good results and five fair results; meaning by "good" where the results aimed at had been fully attained and the improvement permanent, and by "fair" where a partial improvemant has been secured. In no case has failure resulted. The results of the four operations in the forearm for spastic trouble have been good in three and partial in one.

Tendon grafting is an operation with a future before it, and it has great possibilities, but it must not be employed indiscriminately. It is useless in cases of flail-like joints, where all the muscles are badly affected and it should not be employed in slight cases of paralytic valgus or varus or in slight equinus, the last being easily remedied by section of the tendo Achillis. It is not an operation for the display of anatomical knowledge nor of mechanical skill in operating but one requiring the nicest care in the selection of cases and of the muscles to be employed and careful watching of the results of the operation for several years afterwards.

VISCOGEN, A NEW MILK ADULTERANT.

Housekeepers and pure-food commissioners have a new foe to fight. It is viscogen as a milk adulterant. It has been found by inspectors of the dairy department in Minnesota, and so far as known, its use is yet confined to that state. When its properties become generally known, however, it may confidently be looked for elsewhere. It is a syrup composed of sugar, lime and water, about the color of water, and is used chiefly to make the milk appear richer than it really is. When viscogen is placed in milk or cream the lactic acid turns the lime in the fluid into a white, thick substance, which, assimilating with the milk, gives it an appearance and taste of great richness. It is possible through its use to palm off upon customers milk and cream which are far below the standard. —*Medical News.*

THE VALUE OF WIDAL'S SERUM REACTION IN THE DIAGNOSIS OF TYPHOID FEVER IN CHILDREN.

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WIDAL'S serum reaction has been employed very extensively in all civilized countries in the diagnosis of typhoid fever, and though at first the value of the results obtained was impaired by the want of knowledge of the difficulties to be faced, it has now for some time been firmly established as an accurate and trustworthy means of recognizing the disease. The degree of dilution of the blood serum to be employed, the persistence of the reaction after the disease is over and various other questions still remain open for discussion. But, on the whole, I believe that it is now generally conceded that from 95 to 97 per cent. of all cases of typhoid fever give the reaction at some time or other during the course of the disease. The percentage of failures and the percentage of cases not of typhoid fever which yet give the reaction have been and still are steadily diminishing, as the various fallacies which are involved are pointed out.

Bnt though the value of the test has now been recognized in the case of adults it is otherwise with the typhoid fever of children. In the first place, statistics relating to children are very scanty; secondly, the clinical diagnosis of typhoid fever in children is often more difficult than in adults and as a consequence the test is often misapplied; and lastly, perhaps as a corollary of this, some authorities have maintained that a large number of cases of undoubted typhoid fever in children fail to give the reaction.

For example, Dr. A. H. Wentworth, of the Harvard Medcal School, states that he has failed to obtain the reaction in "quite a number of children," and goes on to say that "the cases in which the test failed were either mild or moderately severe, and in a number of cases other members of the family had typhoid at the same time."[1] My own experience during the last two years at the Hospital for Sick Children, Great Ormond street, has been so different to that just quoted that it appeared to me to be worth while to discuss the question of the value of the reaction in children again.

I have had occasion to employ the test in rather more than 100 different cases. Of these, 42 gave a positive reaction, while the remainder were negative, this latter group including examples of almost every febrile disease to which children are liable. I have employed the test among these 100 cases on about 150 occasions, so that I have in many instances repeated the test several times in one case. I may remark here that doubtful reactions have been met with only very seldom and that in such instances I have always at once employed a different cultivation of the bacillus and repeated the test and have never found the doubtful result recur.

Before I consider these figures I must briefly describe the method I have employed. There are, I suppose, few tests in ordinary clinical use with so wide a divergence in the actual methods used. That which I have used is not a method of scientific accuracy but fulfils roughly the conditions of dilution which are recognized as necessary. I have employed a broth culture of the typhoid bacillus not more, and usually considerably less, than twenty-four hours old. This is made from a stock culture of the bacillus, which is from time to time renewed from a trustworthy source. I take a small quantity of the patient's blood in a sterile glass pipette and dilute the blood in the pipette with an equal quantity of sterile broth; then the pipette is placed in a centrifugal machine and the blood corpuscles separated. Then to one platinum loopful of the diluted serum I add fifteen loopfuls of the broth culture of the typhoid organism on a cover slip, thus obtaining a dilution of 1 to 30. The cover slip is sealed on the side with paraffin to prevent evaporation and examined at intervals till the end of an hour. If there is no clumping the action is said to be negative. I have wherever possible taken the precaution of doing a control test with the blood of a known typhoid patient who has previously given the reaction. I should add here that the time limit does not appear to me to be of great value, for my experience has been that if no clumping has occurred at the end of an hour there is none at the end of twenty-four or forty-eight hours, and in cases where the reaction has been positive the clumping has occurred within half an hour.

Of the 42 cases in which the reaction was positive, several were cases in which there would have been considerable difficulty in recognizing the disease without the authority of the test. Thus, for example, the symptoms in one case were so slight that on the third day after admission, the sixteenth day of the illness, the temperature was normal and the child quite well. The Widal reaction was, however, positive on the first day of admission, the fourteenth of the illness, and was fully justified by the occurrence a week later of a typical relapse with an eruption of rose spots. In another case the temperature reached normal on the tenth day of the illness and convalescence was uninterrupted. Widal's test was, however, positive on the ninth day of the illness, and this result was supported by the fact that a younger sister was at the same time in the hospital with a fairly severe attack of typhoid. The patient herself also had an enlarged spleen and a few rose spots. On the whole, there was no positive result in any case which was not at least more like typhoid fever than any other disease, so that I feel justified in claiming for these cases that a positive result implied the diagnosis of typhoid.

Secondly, there was no case which clinically was an example of typhoid fever which failed to give a positive reaction. The majority of cases of typhoid at the Hospital for Sick Children are admitted about the middle of the second week of the illness and therefore the reaction has usually been present on admission; in only two cases was the reaction absent on admission; one was on the fourth day. On the fifth day action was prompt and decisive. In the other case, which was undoubtedly one of typhoid, the reaction was obtained once only in the third week of the illness; negative results were obtained before and after the positive reaction.

Thus to sum up the results of these 42 cases of typhoid fever: all gave the reaction, 40 on admission, and one case alone gave negative results later than the first week of the illness. Next turning to the cases that were not typhoid fever: In the majority of instances the test was employed in order to exclude the possibility of overlooking a case of the disease, but in a few instances the diagnosis of typhoid fever was made, to be shaken by the occurrence of a negative result with the serum test and finally disproved by the course of the disease or the opportunity of a post-mortem examination. Thus, to take an example: A child was admitted in the third week of an illness which had many points of resemblance to typhoid fever and was treated as such. Widal's reaction was negative, and she rapidly improved and left the hospital in a fortnight. A month later she was admitted with precisely similar symptoms and died on the twentieth day with tubercular meningitis, a diagnosis confirmed by post-mortem examination. The list of diseases which gave a negative reaction included besides tuberculosis, pneumonia, posterior basic meningitis, rheumatism, gastritis, acute diarrhea, tuberculous peritonitis, appendicitis, measles and various other diseases. None of these ever showed any positive reaction. So far, then, if the smallness of the figures with which I am dealing permits of deductions, I should claim (1) that in children's diseases a positive Widal reaction is trustworthy evidence of the presence of typhoid fever; (2) that a negative reaction later than the tenth day of an illness is strong but not absolutely convincing evidence of the absence of typhoid fever; (3) that repeated negative reactions are trustworthy evidence that the case is not typhoid at all.

It will be seen that, so far from agreeing with Wentworth, my results indicate that the test is at least as reliable in children as in adults. But I believe it is even of greater value in children. In the first place one can generally exclude in children the occurrence of a previous attack of typhoid. In adults this has been in the past a frequent cause of mistakes, for the reaction sometimes lasts months or even years after an attack of the fever, and so a positive reaction is obtained where there is no typhoid fever present. This source of error is far less likely to be active in children. Secondly, judging from the few cases I have been able to test before the end of the first week I should feel inclined to agree with the conclusions of Wilson and Wesbrook[2] that the reaction occurs earlier in children than in adults. Of six cases tested within the first week all but one responded promptly and decisively. The one exception, mentioned above, gave a negative reaction on the fourth and a positive on the fifth day. These six cases are the only ones which I have been able to examine within the limits of the first week. Wilson and Wesbrook, however, found the reaction in a large number of cases before the fifth day of the illness; in one case even on the first day. In adults, on the contrary, to quote Dr. Marsden, in his paper in the *Lancet* last month,[3] "the serum reactions may remain indefinite or even negative for the first ten days or fortnight in a fair percentage of cases."

Again, there is among children a fever which, while strongly resembling typhoid fever, does not run the course nor present quite the symptoms of typhoid. This disease, whatever it is called, whether febricula or simple continued fever, is sufficiently common to be recognized as one of the sources of error in the diagnosis of typhoid. It was formerly supposed that in many instances the disease was an abortive typhoid, and I think there can be no doubt that it is possible for typhoid fever in a child to run its entire course in this way. The use of Widal's serum reaction has, however, shown that few of these cases are true typhoid. In fact, it has introduced certainty where there was confusion, and promises to give even better results than have been already attained, when we have learned more of the conditions which regulate it.

I have to thank the senior physicians at the Hospital for Sick Children—Dr. Lees, Dr. Penrose and Dr. Garrod—for allowing me to make use of the cases in their respective wards.

Dr. CAIGER congratulated Dr. Thursfield on the favorable results he had arrived at. There seemed to be a general impression that Widal's reaction was not so reliable in children as in adults. Dr. Thursfield has put this to a scientific test under more exacting conditions than had ever hitherto been thought of.

REFERENCES.

1. Transactions of American Pediatric Society, vol. xi, 1899.
2. British Medical Journal, 1897, vol. ii, p. 1774.
3. Lancet, July 13, 1901, p. 68.

DEATH OF DR. MONCORVO.

The death of Dr. Moncorvo, of Rio de Janeiro, is announced. He was well known as an original worker in pediatrics, and the therapeutics of this important branch of medicine has been greatly enriched by his labors.—*Med. Record.*

EDITORIAL COMMENTS

"Frequency of Typhoid Bacilli in the Blood."

A paper of this title in the *Johns Hopkins Hospital Bulletin*, July, 1901, by Dr. Rufus I. Cole, Assistant Physician in the Hospital, deserves the attention of medical readers to an unusual degree. We hope that the quotation of the following passages will lead many of those interested in the subject to look up and read the entire article. Dr. Cole writes in part as follows:

"I have during the past few months made a series of cultures from the circulating blood of typhoid patients. The technique briefly was as follows: the skin over the anterior surface of the arm at the bend of the elbow was carefully cleaned with green soap and water, followed by alcohol, ether, bichloride of mercury (1-1000) and a hot compress soaked in the latter solution applied for from one half to one hour. It was found by experience that the hot compresses were of considerable importance in causing dilatation of the superficial veins. When ready to take cultures the bichloride was removed by sponging with sterile water. In a few cases the skin over one of the veins was incised and the vein dissected out before inserting the needle. This is usually a very unnecessary procedure, giving the patient a great deal of pain and apparently increasing rather than decreasing the chances for contamination. The only case in which my cultures were contaminated was one in which this was done. By thoroughly cleaning the skin and hands of the operator and by touching the needle only with sterile forceps, never with the fingers, and by working with as little delay as possible, all danger of contamination can be avoided. Just before inserting the needle the arm is grasped tightly below the shoulder by a nurse or assistant and the needle is quickly inserted into one of the superficial veins. By using a small needle and entering the vein with one thrust there is no more pain in obtaining 8-10 cc. of blood than in the administration of a hypodermic or in the puncture of the ear. In all cases 8-10 cc. of blood were withdrawn and after removal of the needle from the syringe the blood was divided among a number of tubes or flasks filled with bouillon. At first tubes were used, but in the last six cases, Erlenmeyer flasks, each containing 150 cc. of bouillon, were used. One to six flasks were used for each case, so that the dilution of the blood was from 1-75 to 1-150. The flasks were then shaken and placed in the incubator and after twenty-four hours, if cloudy, agar plates were made. Usually the organisms in the bouillon were somewhat clumped, at least sluggishly motile, and so not suitable for trying the serum reaction.

"The diagnosis of bacillus typhosus in each case was decided by motility, staining properties, typical growth on agar, glucose agar, gelatin, litmus milk, bouillon, Dunham's peptone solution (which after one week's growth was used for indol test) and finally agglutination by known typhoid human serum, dilution 1-50, in one hour. Frequently a fairly definite conclusion can be reached in thirty-six hours after obtaining the culture. If the bacilli grow out in the bouillon in twenty-four hours, they can be transferred at once to the various media, and from the slant agar after 6-8 hours, a suspension in bouillon can be made in which the serum reaction can be tried.

"Cultures were made from 15 cases, in 11 of which the typhoid bacillus was cultivated. From the last 7 cases in which a greater dilution of the blood was made, the bacillus was obtained every time. The cases included both those of moderate severity as well as those of great intensity. Five of the 11 cases in which the results were positive subsequently died, so that apparently cultures were taken from the more severe cases, though this was rather accidental than intentional, as they were chosen at random. Three of the cases in which the organisms were isolated had very light attacks.

"From all the results given it is apparent that typhoid bacilli occur in the blood with much greater frequency and during a much longer time through the course of the disease than was formerly supposed. The conditions which favor their presence, why they are found at times in mild cases and are absent in more severe ones, are questions which must yet be solved. That cultures from the blood in typhoid fever have very definite clinical importance, especially where the Widal reaction is delayed, as is so often the case, is evident. From my experience the use of considerable amounts of blood, diluting very largely in liquid media, and on account of the use of the latter especial care to avoid contaminations, are the points of chief importance."

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE--SECTION ON PEDIATRICS.

Stated Meeting, May 9, 1901.

William L. Stowell, M.D., Chairman.

A Case of Double Birth Palsy.—Dr. J. F. Terriberry presented a case of this kind. He said that injury to the brachial plexus gives rise to various forms of palsies. Duchenne had been the first to call attention to birth palsy, or. as he called it, to obstetrical paralysis. Conditions which interfere with the delivery of the shoulders predispose to birth palsy, the immediate cause often being the use of the finger or hook in the axilla. Compression of the plexus by the umbilical cord had been mentioned by some writers, but his own belief was that it could only act indirectly by delaying delivery. In the Duchenne type, the one generally found, the arms falls by the side in complete extension. The movements of the fingers are usually perfect and there is little or no disturbance of sensation. The most severe cases were met with in connection with vertex presentations. The electrical reactions varied with the degree of the palsy and could not be satisfactorily determined until the infant was a month or six weeks old. The injury varied from a slight contusion to complete division of the nerve. Birth palsy might be distinguished from cerebral palsy due to hemorrhage on the surface of the brain by the presence of convulsions, the spastic state of the limbs, particularly on motion, the exaggeration of the tendon reflexes and the absence of sensory symptoms. It was often stated that recovery is complete, but this had not been his experience; on the contrary, while he had ordinarily observed marked improvement he had never seen complete restoration to the normal. If reaction were obtained with the faradic current in the nerve and muscles of the affected limb at the end of the third week one was justified in stating that the child would get almost complete use of the arm. Absolute rest of the affected part should be secured for from two to four weeks. This was best obtained by wrapping the arm in cotton and lifting it up so that there would be no dragging upon the brachial plexus. The application of the galvanic current for a few minutes daily and the systematic use of massage at home were important adjuvants to the treatment.

Dr. Terriberry then presented an infant showing the Duchenne type of palsy in both arms. It had developed in connection with a breech presentation. There were flexion at the wrist and abduction. A child of about 7 years was also shown to indicate what had been accomplished in the treatment. The arm could not be completely extended. Another little child was presented exhibiting an almost complete picture of the Duchenne type of palsy, and yet, on closer examination it proved to be a case of clubhand and not one of birth palsy. The case was shown to illustrate the liability to mistake in diagnosis.

Spastic Paresis.—Dr. SARA WELT-KAKELS presented a case of spastic paresis, probably congenital. The child was 3½ months old and was one of twins born easily at the seventh month. Soon after birth the crossed position of the lower limbs had been noticed. The muscles of the legs were rigid, and the legs and thighs were flexed, while the ankles were extended. In walking, the same crossed position of the legs was maintained. The patellar reflex was greatly exaggerated.

Report of Two Cases of Hypertrophic Pyloric Stenosis.—Dr. J. H. LARKIN reported these cases and exhibited sections. One was a case of congenital pyloric stenosis and the other one of fibrous pyloric stenosis occurring in an adult. Our knowledge of pyloric stenosis, Dr. Larkin said, dated back to 1842, when Williamson had described a case. Renewed interest had been aroused in 1899 by a report made by a Scotchman named Thomson. The first case was that of a child born at term of healthy parents. When 2 weeks old the child had begun to vomit and this vomiting had been frequent and persistent. The child died seven weeks after birth. a diagnosis of marasmus only having been made. At the autopsy the stomach had been found slightly dilated and the pylorus markedly thickened. There was no evidence of any lesion of the mucous membrane; the other organs were perfectly normal; sections were made from the pyloric region and were examined microscopically. The thickening of the pylorus was found to be due to an increase in the circular muscular fibers. There was newly formed connective tissue between and replacing the tubular glands of the mucous membrane. In all the other reported cases of congenital pyloric stenosis, with two exceptions, the lesion had been confined to the inner circular muscular fibers without increase of connective tissue and substitution of the same for the mucous membrane of the stomach. Thomson considered the affection a functional one and dependent upon disturbed innervation of the stomach, but this did not explain the proliferation of connective tissue. Meltzer suggested that congenital pyloric stenosis was the result of an embryonal defect. A number of cases of congenital gastric spasm had been reported but this condition should be differentiated from true pyloric stenosis. In this connection a specimen was shown of a pylorus removed from a man 46 years of age. There was a history of vomiting and pain in the stomach at intervals during early infancy, and of chronic dyspepsia. He had recently submitted to a laparotomy and a gastroenterostomy, and although he had recovered from this operation he had succumbed seven weeks later to an acute lobar pneumonia. Examination of the pylorus showed a large quantity of cicatricial fibrous tissue taking the place of the mucosa.

A Case of Cancrum Oris.—Dr. W. S. Bainbridge reported this case. The patient was a foundling of 16 months who, on January 26, had first shown tenderness and soreness along the upper jaw. On January 28th there was an ulcerated patch which had been treated by frequent antiseptic washings, and as the disease had spread rapidly a few days later a surgical operation had been done. This consisted in a free incision in the superior alveolar process down to the bone. The latter was quite spongy and was removed up to the nose and the antrum of Highmore. The large cavity thus left was treated with nitric acid and was subsequently washed out frequently with peroxide of hydrogen. The cavity had filled up rapidly and completely and the child was now entirely well and there was almost no trace left of the operation.

Two Cases of Cretinism.—Dr. D. Bovaird presented two children by way of contrast. The first, a child of four years, had been seen first last October and had then presented the typical features of a cretin. It had done well on thyroid extract until checked with whooping cough. It was now suffering from this complaint and was losing ground in consequence. The other child was two years old and was fairly well developed and presented a less typical appearance of cretinism. It had only been on the thyroid extract for three weeks but was improving under it, taking 1 grain three times a day.

An Investigation of Adenoids, Especially with Reference to Tuberculosis.—Drs. M. Nicoll, Jr. and A. J. Lartigau presented a joini paper on this subject, which was read by Dr. Lartigau. In order to determine whether or not bacteria other than tubercle bacilli invade the pharyngeal adenoids, 11 adenoid growths had been examined by a rigid bacteriological technique. The tube and plate cultures from 5 of the 11 specimens had remained sterile, and in the others the organisms were rather scanty, the streptococci predominating. In two or three instances the organisms had been tested for virulence and had been found to be non-virulent. Two of the specimens showed in sections foci of bacteria without any inflammatory reaction; 75 consecutive specimens of adenoids had been tested for tuberculosis and so far as could be ascertained the children from whom these adenoids had been taken had been otherwise quite healthy. Half of each adenoid had been used for inoculation purposes and the other half for microscopical examination. Ten per cent. of the cases contained both tubercle balilli and the histological lesions of tuberculosis; 5.3 per cent. contained tubercle bacilli without any definite lesions of tuberculosis. Adenoid vegetations consist chiefly of a hyperplasia of the pharyngeal tissue. At least ten sections were examined from each adenoid. The thickness of the epithelium and the morphology of the cells were different in different specimens. Of the 46 specimens examined 13 showed a normal thickness of the epithelium and almost all showed a distinct basal membrane beneath the epithelium. Twenty-nine specimens showed no noteworthy increase in the fibrous tissue of the adenoid. The shrinking of adenoids had been attributed to this fibrosis, but it was probable that this was only one of several factors. Of the 12 specimens containing tubercle bacilli only, 8 presented giant cells, caseation and epitheloid cells. In all cases the bacilli were close to the surface and few in number. The infection of the adenoids therefore takes place from the surface apparently without any solution of continuity in the epithelium. The relation of adenoids to scrofula has been made a subject of investigation but it had not been possible to make out a clear relation between the two.

Dr. M. Nicoll, Jr. said that the chief object in making this investigation was to ascertain if possible the source of tuberculous infection in children. It seemed to him very significant that in 10 per cent. of their cases there should have been a tuberculous focus in the respiratory tract. With improved technique and a larger number of cases he firmly believed that tuberculous adenoids would be found to assume a more important role than hitherto.

A Case of Subcutaneous General Emphysema.—Drs. W. L. Carr and Samuel Pierson reported this case, the report being read by Dr. Pierson. The patient was a boy, 4½ years old, who had been taken ill on January 27th. On February 1st the clinical symptoms had been those of a pneumonia without physical signs, and later on the physical signs of pneumonia had been evident in the right lung. On February 6th the other lung had become similarly affected and the temperature had risen to 106° F. On February 11th slight emphysema of the neck had been noted and by the next day it had become general on the arms and trunk. Both lungs cleared up about this time, but the emphysema extended all over the body. In the next three weeks the emphysema gradually disappeared, and the child was discharged cured on March 10th. The pneumonia was an acute lobar one. According to medical literature, emphysema complicating this form of pneumonia almost invariably terminates fatally.

Dr. Carr said that when he had first seen the child the respirations had been 60, the pulse 135, and the temperature 101° F., and there had been a general emphysema. The percussion note was tympanitic all over and there was abundant superficial crackling. During an attack of coughing the emphysematous tissue, especially about the neck, greatly increased. An examination of the sputum had been made by

Dr. Wollstein but no tubercle bacilli had been found. The pneumonia was undergoing resolution at the time of the onset of the emphysema. In most of the reported cases the emphysema had been associated with tuberculosis or with whooping cough or measles.

A Dozen Cases of Spinal Analgesia in Operations on Children Under Six Years and a Half.—Dr. W. S. Brinbridge read this paper. The needle which he employs is so constructed that it will not break at the point, but will readily bend in the shank. Since the publication last December of his paper on spinal analgesia, the first contribution on the use of this method in children, he had employed it in twelve operations, done on children varying in age from four months to six years and a half. He had compared the action of cocain and eucain in the same case, and had shown that beta eucain is far less reliable than cocain. Three different injections of beta eucain were given in order to give sufficient dosage. Vomiting occurred and lasted for a few minutes, but the only analgesia induced was patchy and irregular and passed off very quickly so that it had become necessary to postpone the operation until another day. The operations described in the paper included osteotomies, the radical cure of hernia, circumcision and cauterization of the rectum for prolapsus. The author said that there had been only two cases reported so far, both by himself, in which subarachnoid injections of cocain had produced analgesia all over the body.

Dr. J. Leonard Corning said that the results achieved by the author of this paper were certainly most encouraging, and he, for one, felt that this method of inducing anesthesia was not likely to be discarded by surgeons. It was yet far from perfect and would most probably be modified by varying the specific gruvity of the fluid injected, by substituting electric cataphoresis for puncture of the membranes, or in many other ways.

Dr. Charles M. Ford said that he had witnessed about ten of Dr. Bainbridge's operations and could testify to the perfect anesthesia secured. One case was that of an exeeedingly nervous subject, a boy of 8 years, yet within ten minutes after the injection of the cocain the boy had become perfectly quiet and had submitted to the hernia operation without showing any further excitement or fear. He felt that the method would prove very useful in all operations below the diaphragm. He had not noted any important after-effects.

Dr. W. E. Young said that over fifty cases of subarachnoid injection had been under his observation for over seven months. In only one case had there been any untoward effects and that had been in a boy who had been subjected to curetting of the vertebræ and the removal of tubercular tissue. The boy had been very ill for a few days afterward, but the same had been true on one occasion after using chloroform. Ethyl chloride had been used in connection with the injection of the cocain. The site of the injection had been varied but the results had not been materially different. Anesthesia had been induced in from half a minute to fifteen minutes after the completion of the injection. There was rarely any great variation in body temperature. All of the patients could distinguish between heat and cold but did not suffer pain from the application of the actual cautery. Tactile sensibility was also retained in all of them. In every case in which cocain had been used the anesthesia had extended up to the diaphragm. The only bad effect had been headache and this had been always relieved by the hypodermic injection of 1/100 of a grain of nitroglycerine. The headache had been averted in some cases by the previous administration of sodium bromide. Most of the patients had slept well within a few hours after the operation. There had been no infection in any case. In one instance, that of a little Cuban boy who had been almost in collapse previously from the administration of chloroform, 8 minims of a 2 per cent. solution of cocain had been injected into the spinal canal, and in eight minutes the anesthesia had been satisfactory and there had been no bad after effects.

Dr. J. H. LARKIN said that in one of the hospitals of New York City a lady had been operated upon the past year for the removal of the tubes and ovaries. Cocain had been injected and the anesthesia had been complete. No difficulty had been experienced during the operation except from the resistance afforded by the abdominal muscles. In six hours after the woman was returned to the ward she was dead. The speaker said that he had been asked to make the autopsy. The respiratory apparatus and all of the viscera had been found practically normal. There was no edema of the brain or spinal cord except one small punctate mass in the membranes and in the periphery of the cord substance; this was the site of the puncture. The woman appeared to be perfectly healthy. He had just observed in one of our medical journals another report of a death following upon the use of spinal analgesia.

Dr. BAINBRIDGE said that he had carefully examined the literature of 1080 cases and there had been no cases of "complete" analgesia reported, and not a death. The fact that a punctate hemorrhage was present in the cord itself in the case just reported by Dr. Larkin seemed to him excellent evidence that the injection had been made too high up and in a position where the cord is exposed to injury. His own practice was to make the injection so low down as not to injure the cord. It seemed to him that he had proved beyond question that Tffiuer was in error in supposing that this method of inducing analgesia was not thoroughly applicable to children. These little patients were often quite hysterical at first but as soon as the injection had been made they suddenly became calm.

PEDIATRICS

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VOL. XII. NOVEMBER 1st, 1901. No. 9

EDITORIAL COMMENTS

Typhoid Bacilli in the Blood as a Means of Diagnosis of Typhoid Fever

The early diagnosis of typhoid fever is a subject on which the best thought of the profession has been intensely concentrated during recent years. Repeatedly our hopes have been raised by new announcements, only, for the most part, to be dashed again.—The Widal "clump" reaction cannot indeed be called a total failure. It is of inestimable value in those cases of continued fever lasting over three weeks in which it continues to be absent. It may be expected to appear in about 96 per cent. of all typhoid cases at *some* period during the disease. The baffling element is its tardiness, for the appearance of a positive reaction is exceptional before the middle of the second week, and as is well known, it may be deferred till convalescence has set in, long after the diagnosis has already been made on other grounds. Since the first announcement of successful cultures of the bacillus from the blood in suspected cases, hope has periodically waxed and waned that this might be a practical and successful resort. It is only recently, however, that the subject may be said to have emerged from its place as an occasional laboratory curiosity. The best results of Tuttle and James in 1898 (*Presbyterian Hospital Reports*, N. Y., 1898),—on the whole as good as any reported to that time,—were only three successes in thirty-eight trials.—Dr. Cole's report (reviewed in the last number of PEDIATRICS) of seven successful cases in succession is most encouraging. His method, however, still lacks much of being available except in the hands of an experienced bacteriologist,—such a one as is not ordinarily to be found outside the centers of medical learning. And until a better way of differentiating the bacillus typhi from the colon bacillus is discovered, even laboratory workers show a disposition to be guarded in their identifications.—Indeed we feel disposed to venture the assertion that when such a method is devised, the application of it to cultures from the feces will probably be the final form in which the discovery bears fruit.—In this connection it is perhaps not too soon to call attention to the confirmation that has followed Rothberger's announcement in 1898 that the color reaction of the colon bacillus with "neutral red" is a safe and reliable *differentia* between it and the bacillus of typhoid fever.—Dr. Wm. Hunter (*Brit. Med. Jour.*, September 21, 1901) states that his experiments have been uniformly successful in thus distinguishing the two. Rothberger's test is readily made: "If small quantities of neutral red be added (in saturated aqueous solution) to agar tubes and these be inoculated with the B. typhosus and the B. coli communis, a striking result is obtained. In the tubes inoculated with B. coli the red agar becomes greenish-yellow and fluorescent in twenty-four to thirty-six hours; in the typhoid tubes no change whatever is produced."

Until something quick and practical, however, is evolved from this interesting discovery, we should be grateful enough for a process as practical and successful as that of Dr. Cole.

B.

Ringworm in School Children

Within the past decade Sabouraud has done much to increase our knowledge of ringworm and its causation. He has proved that ringworm is not due to one but to several species of fungus; that the microsporon Audouini is the cause of those very persistent forms that seem to resist almost every method of treatment; that another parasite, the trichophyton megalosporon endothrix causes a form of disease that rarely lasts beyond a year; while a third fungus, the trichophyton megalosporon ectothrix produces a ringworm that rarely lasts beyond a few months. There are probably many more species that are not yet fully described. Having clearly pointed out that ringworm is not due to one organism but to several, he has thereby shown that it is not alone sufficient to separate all cases of this disease from healthy children at school, but that those children suffering from disease caused by different species of fungus should, so far as our knowledge permits, be segregated according to the etiology of their several affections. This has been fully set forth in an article by Dr. A. D. Mewborn, entitled "Ringworm and Favus," which appeared in PEDIATRICS for October 1, 1901. This writer strongly advocates the segregation of those suffering from the different forms of parasitic affections of the scalp in those of our local hospitals and asylums where ringworm and its congeners are now treated. It is manifestly unjust to subject a child suffering from a form of ringworm that would recover of itself in a few weeks to the danger of contracting a disease that might last for years. Again it seems hard that children suffering from what after all is in no wise a dangerous affection should be kept away from school for months or may be for years. In a recent lecture Malcolm Morris (*N. Y. Med. Jour.*, September 28, 1901) quotes from an article published by him in 1891 in which he suggested the establishment of separate schools for children affected with ringworm, so that they might continue their studies while at the same time they could be under competent medical supervision and treatment. Such a plan seems practicable and has been adopted, according to Morris, in Rome and in one or two cities in Italy and Belgium. He says also that recently a school has been established by the Metropolitan Asylum Board of London at Witham, in Essex, for children suffering from ringworm. This school, however, is only for children under the care of the London boards of guardians and has accommodation for only 160 children. T.

RADICAL CURE OF INGUINAL HERNIA IN CHILDREN.

By Harold J. Stiles, F.R.C.S., Edin.,
Edinburgh.
Surgeon to the Royal Edinburgh Hospital for Sick Children.

DURING the past three years that I have had charge of the surgical wards of the Royal Edinburgh Hospital for Sick Children, I have operated on rather more than 100 herniæ in children. This communication is based upon the experience derived from these cases. I do not propose to enter in detail into the vexed question of trusses versus operation in the treatment of hernia in children. The subject was discussed at the meeting of this association held at Portsmouth only two years ago. Our President today (Mr. Eve) took an important part in that discussion.[1] In the course of his remarks he expressed the opinion that in a large percentage of the hospital cases the treatment by truss was unsatisfactory, owing to the carelessness and ignorance of the parents. That has been my experience also. The inconvenience connected with the truss treatment, its long duration and its uncertainty in bringing about obliteration of the funicular process are weighty objections against it. If it be the case that in experienced hands the operative treatment of hernia in children is practically free from risk, that it is not followed by recurrence, and that it is unnecessary for the patient to wear any apparatus after the operation, then it seems to me that the surgeon is quite justified in taking the responsibility of recommending it. As illustrating the safety of the operation I have only to mention that in upwards of 500 hernia operations in children Coley, of New York, has only had one death and that from double pneumonia following ether. Personally, I have not been so fortunate; I have had three deaths which will be referred to again later on. In private practice if the claims of the two methods of treatment be placed fairly before the parents, my experience is that the decision will generally be in favor of operation; 40 per cent. of the cases I have operated upon have never worn a truss.

Much difference of opinion exists in regard to the most suitable age at which to operate. Surgeons who are in favor of operation advise that it should not be performed until the child is at least 1 year old. The majority, perhaps, prefer to delay until after teething, while others advise that it should not be undertaken until the child is four or five years of age. It is true that operation is less frequently called for in young infants because in them there is a natural tendency for the funicular process to close, and the application of a truss has therefore more chance of bringing about a cure. Should there be any difficulty, however, in keeping up the hernia it has been my practice to proceed to operation even although the child be only a few months old. An infant is more easily managed than a child who has just begun to run about, and the after-treatment of the wound is not more difficult in the former than in the latter; moreover, my experience is that infants stand the operation remarkably well. Of my first 100 cases, I find that the operation was performed in 14 under 6 months; in 9 between the sixth and twelfth month; in 56 during the second and third year, and in 21 above the third year. I cannot agree with Mr. Langton's statement that anatomically the conditions of the structures concerned in inguinal hernia are not favorable for effective suturing in early life, for there is practically no canal, the aperture of primary exit of the hernia being almost opposite the external ring, The muscles and other structures also are so soft and ill-developed as to afford very insufficient support to suturing the boundaries of the canal. I maintain, on the contrary, that the anatomy of the parts concerned in hernia in children is such that the radical operation is not only simpler but also less likely to be followed by recurrence than in the adult.

As has been well pointed out by Russell,[2] the sac, that is to say the partially or completely patent processus vaginalis, is pre-formed and is the essential factor in the etiology of the hernia. It follows, therefore, that the essential step in the operation in the child is the isolation and removal of the patent funicular process, its neck being ligated at the level of the internal ring. The very fact that the canal in children is so short and that the internal ring is almost opposite the external ring enables the operator by dragging down the isolated funicular process to apply a ligature to the neck without material injury to the aponeurotic and muscular structures of the abdominal wall. Russell prefers to limit the operation simply to the isolation, ligature and excision of the funicular process.

He is careful to avoid incising the anterior wall of the canal, and maintains that the application of sutures to the canal is unnecessary "no matter how large the hernia or how wide may appear to be the opening of the canal." In his hands recurrence has not so far followed this simple procedure. Personally, I prefer to introduce one or two sutures according to the patency of the canal, as this can be done without damaging the sphincter-like action of the lower fibers of the internal oblique and transversalis muscles. I have never seen any harm produced by the introduction of sutures. It seems to me that by reducing the size of the external abdominal ring and including the conjoined tendon in the suture the liability to the development of an acquired hernia in after life is diminished.

For the sake of simplicity the few statistics which will be given have reference to my first hundred cases. Of these, 95 were males and 5 females. As regards the side affected, it is interesting to note that 72 were right sides, 20 left sides, and 8 double. The marked preponderance of right-sided herniæ in children is accounted for mainly by the later closure of the funicular process on that side. As regards the age at which the hernia was first noticed, it was found that in 19 it was present at birth, in 45 it appeared before the fourth month, and in 19 between the fourth and twelfth month. In other words, in 83 per cent. of the cases the hernia made its appearance during the first year of life.

By congenital hernia we do not mean to imply that the child is born with a rupture. The term "congenital" refers to the fact that the sac is present at birth and owes its origin to non-closure of the funicular process of peritoneum. According to Sachs, the funicular process is completely or partially open in 59 per cent. of males under 4 months old. It is evident therefore that in only a small portion of these is a hernia developed. The exact type of sac in the cases operated on was, unfortunately, not noted in some of the earlier cases. Out of the 78 cases in which it was recorded it is interesting to observe that in 72 the sac did not communicate with the tunica vaginalis. It follows therefore that in by far the commonest form of congenital hernia the sac resembles that of the so-called acquired oblique inguinal hernia of the adult. It is more than probable therefore that the majority, according to Russell "all," oblique inguinal herniæ which are met with in adolescents and young adults are really congenital. Coley, as a result of a careful inquiry into the histories of 15,000 cases of inguinal hernia in adults, finds that one-third were ruptured during childhood. These data afford a strong argument in favor of operation during childhood.

The operation I prefer for the radical cure of inguinal hernia in children is practically Mitchell Bank's operation. There can be no doubt as to the value of Bassini's operation in adults; in children, however, I entirely agree with those surgeons who advise as little interference as possible with the anterior wall of the canal. The steps of the operation as I am in the habit of performing it are:

1. Exposure of the cord along with its covering and the pillars of the ring.
2. Isolation, ligature and excision of the funicular process.
3. Closure of the ring.
4. Suture of the wound.

1. The incision is made a little above and parallel to the inner half of Poupart's ligament. It should not be carried down into the scrotum or too near the penis, otherwise there will be difficulty in keeping the lower end of the wound covered and at the same time leaving the penis free. The upper and lower flaps are to be slightly reflected so as to freely expose the inner pillar and the groove between Poupart's ligament and the fascia lata of the thigh.

2. After freeing the cord along with its coverings, the latter are caught up laterally at the lower part of the wound by two pairs of forceps which are held by the assistant in such a way as to stretch out the coverings. These are then carefully divided; first, the intercolumnar and cremasteric fasciæ, the muscular fibers of the latter being easily recognizable; next, a thin, white layer, the infundibuliform fascia, and beneath it the peritoneum of the funicular process. Now comes the most important stage of the operation and the only one which presents any difficulty, namely, the isolation of the sac, that is to say, the funicular process. When a truss has not been worn the infundibuliform fascia can, with a little care, be separated from the funicular process, to which are adherent the spermatic vessels and the vas deferens. The vessels lie in a bundle to the outer side of the sac, while the vas, which is rather more adherent, lies more posteriorly. These structures are first detached towards the fundus of the funicular process,

which is then grasped by a pair of forceps and pulled downwards so that their separation may be continued upwards as far as the internal abdominal ring. The neck of the sac is now transfixed, and ligatured with catgut, the sac itself being cut away. It is quite unnecessary to suture the stump to the muscles of the abdominal wall above the level of the internal ring. The necessity for slitting up the neck of the sac practically never arises except in some cases of strangulated hernia; it should be preserved intact at the seat of ligature. An opening may be made into the lower part of the sac in order that the surgeon may make sure that in ligaturing the sac he does not nip the bowel or include a piece of omentum or a portion of the wall of the bladder. When the coverings of the hernia have become thickened and adherent, a condition generally brought about by the pressure of a badly-fitting truss, considerable difficulty may be experienced in isolating the sac and at the same time avoiding injury to the spermatic vessels and vas deferens. In these cases it is often an advantage to open more freely into the sac and to strip it from the other coverings. When the hernia is of comparatively recent standing, and when no truss has been worn the sac is generally so delicate and transparent that there is no necessity to open it at all; the operation then becomes entirely extra-peritoneal.

3. The suture or sutures are passed through the inner pillar and conjoined tendon on the inner side and through Poupart's ligament on the outer side, care being taken to leave room for the cord. For passing the suture I would like to draw attention to the advantage of an American instrument, known as the Cleveland needle, over the Macewen needle or its modifications. I am indebted to my friend, Dr. Walker, of St. John's, New Brunswick, for bringing this very useful instrument to my notice. For the sutures I prefer catgut which has been prepared by boiling in superheated alcohol according to Jellet's modification of Fowler's method.[3]

4. For closing the wound I prefer an interrupted to a continuous suture, as the former enables one to dispense with drainage, which is frequently necessary if the latter be used. As a dressing I have employed both the collodion method and the application of an ordinary gauze dressing fixed by a bandage. In the hands of a good nurse I prefer the latter on account of the accumulation of exudation which sometimes

occurs beneath the sealed wound. If a spica bandage be carefully applied so as to completely cover the wound, and at the same time leave the penis and scrotum free, a good nurse should have no difficulty in preventing the dressings from being contaminated by the urine. Boracic powder should be freely dusted in the neighborhood of the genitals. In infants all dressings may be dispensed with on the second or third day and the wound thickly dusted with boracic powder or sealed with collodion.

In the case of an infant, after three or four days the child need not be kept constantly in its crib; it may with safety be nursed or carried about as usual. A child who has learned to walk should be kept off its feet for three weeks.

Before concluding let me summarise the more important clinical facts to be gathered from a study of this series of 100 cases. Eighty-six were easily reducible and in many of these the hernia remained reduced without a truss provided the child was kept in bed. Even when the hernia is not down it is, I think, always possible to determine which is the affected side. By carefully manipulating the cord on the two sides the empty sac may be distinctly felt when the constituents of the cord are rolled between the finger and thumb. This is a point of importance, more especially in cases in which the hernia does not happen to have been down between the date of admission to hospital and the time of operation.

Out of the 7 cases which were admitted as irreducible and possibly strangulated, four became spontaneously reduced within a few hours of admission, even although taxis had failed before the child was sent to hospital. In one of these cases I proceeded to operation, although the hernia had become reduced during or just before the administration of the anesthetic. The operation was a simple one and of short duration. During the night there was frequent vomiting and the child became collapsed and died the following morning. At the post-mortem examination about 4 inches of small intestine were found to be very severely bruised and there was extensive extravasation of blood into the adjacent mesentery. There can be no doubt that the taxis was responsible for this condition. In another case in which taxis had been employed under an anesthetic before admission severe bruising of the coverings was discovered at the operation. As a result of this experience I have resolved in similar circumstances to delay operating for the hernia until sufficient time has elapsed to enable one to ascertain if any harm has been produced by the taxis. I have referred specially to these cases of spontaneous reduction after taxis in the hope of emphasizing the dangers, especially in children, associated with the undue use of taxis under an anesthetic. If gentle manipulation fails to reduce the hernia the child may be given an opiate, and either an ice-bag or hot fomentations should be applied to the part; within a few hours it will generally be found that the hernia has become spontaneously reduced. Of the three remaining irreducible cases two were cecal hernia and in one the omentum was adherent.

Most authorities refer to the rarity of strangulated hernia in children. This condition was met in 7 out of the 100 cases; the ages of the children in whom it occurred were 2 weeks, 5 weeks, 12 weeks, 11 months, 12 months and 18 months respectively, thus bearing out the general experience that strangulation in children generally occurs in infancy. In 4 out of the 7 the bowel became strangulated on the first appearance of the hernia. Fortunately strangulation is a gradual process in children, so that there is ample time to arrive at a diagnosis and to afford relief by operation before the bowel has become gangrenous. In these 7 cases, all of which recovered, it was deemed safe to return the bowel; in one case, however, I considered it advisable to invert a portion of the lumen of the gut. The constriction may be situated either at the external abdominal ring or at the neck of the sac; in the latter case it is necessary to divide the anterior wall of the inguinal canal and it is often impossible to preserve the neck of the sac intact. It is in these circumstances that the method of radical cure introduced by Bassini should be performed.

Of cecal herniæ there were 7; they all had these characters in common, namely, that they appeared within the first few weeks of life, that relatively to the other herniæ they were large, had a wide neck and were difficult to keep up with a truss. In all of them the sac was complete and the cecum was free and completely reducible. Two were irreducible at the time of operation and in at least 4 the appendix could be palpated through the scrotum. In 4 it was deemed advisable to remove the appendix either on account of its unusual length or of some swelling or induration toward its apex.

In three cases the sac was found to be tuberculous. In none of these had there been any suspicion of tuberculous peritonitis previous to the operation, but on examining the abdomen while the child was still under chloroform enlarged glands could be made out in each case. In one of the cases about 10 ounces of fluid were evacuated; a tuberculous sinus resulted, but healed in the course of six weeks. When the sac is tuberculous the abdomen should not be freely opened in the region of the inguinal canal. Should the disease advance laparotomy may be performed at a future date.

As regards recurrence, my cases have been too recently operated on to enable me to give personal statistics of any value. At present I am only aware of 2 cases having recurred —the one a strangulated hernia in which the structures at the neck of the sac had to be freely divided before the bowel could be returned, the other a child with epispadias in whom there was also separation of the pubes and imperfect development of the muscles of the abdominal wall.

Lastly, with regard to the three deaths—one has been already sufficiently referred to; of the remaining two, one was that of an infant, aged 18 months, who died thirty-six hours after operation. No post-mortem examination was allowed. It is possible that the operation may have been the direct cause of death, but it is only fair to mention that there was a severe epidemic of influenza in the wards at the time. The third case was that of a girl, aged 4½ years, who suffered from a small, reducible, uncomplicated inguinal hernia. The operation was a very simple one. Death took place on the third day, the patient having developed acute jaundice and suppression of urine. The wound remained perfectly healthy. At the post-mortem examination there were no traces of peritonitis. There was advanced fatty degeneration of the liver; the kidneys were intensely congested; the spleen was practically normal. At first I thought that death might possibly have been due to acute septicemia, but, from what I have since seen I am satisfied we had to do with one of those cases of chronic chloroform poisoning such as Guthrie has shown may occur in children who suffer from advanced fatty degeneration of the liver, a condition which unfortunately cannot be diagnosed before operation.[4]

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DIAGNOSIS OF SUPPURATIVE PERICARDITIS IN CHILDREN.

By Frederick E. Batten, F.R.C.P.,
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THE difficulty of arriving at a correct diagnosis in cases of purulent effusion into the pericardium of young children is well known to all those who have had the opportunity of watching cases during life and seeing them also in the post-mortem room. It is a disease seldom suspected still more rarely diagnosed and hardly ever treated, and yet it is one that is present in nearly 3 per cent. of the deaths in the records of the Children's Hospital.

Even if the disease can be successfully diagnosed it by no means follows that it can be successfully treated, but until diagnosis is more accurate treatment is impossible. It is therefore with this object, namely, the diagnosis of effusion into the pericardium that I have ventured to bring before you certain points in relation to the disease as I have seen it in the wards and post-mortem room.

My remarks are based on the observation of some 6 cases, 5 of whom were boys and 1 a girl; their ages varied from 10 months to 3 years. Their illness on admission to the hospital had lasted from four to nine weeks and the total duration of the illness from the onset till death varied from seven to fifteen weeks.

In every case a definite onset to the illness could be fixed although it was not necessarily acute. In 2 cases measles had been the starting point of the disease while in the remaining cases it had been bronchitis or pneumonia. The importance of careful attention to the history is, I am convinced, great, and the history obtained closely resembles that which is obtained in cases of empyema rather than the longer history of *malaise* which is usually obtained in cases of tuberculosis. It is difficult to point out any very definite feature in the temperature which may be considered characteristic of the disease, but sudden falls are not uncommon and are attended with collapse; the general curve of the temperature is irregular with but few subnormal points.

The pulse is almost uniformly rapid and out of proportion to any distress or discomfort which the child may exhibit; in fact, one may find a pulse of 150 to 160 with apparently very little distress.

The respiration is usually increased, but maintains its normal ratio to the pulse.

As regards their general condition, the children are usually pale, with often fat and flabby cheeks; their bodies also are often fairly nourished, but the skin is pale and the muscles are flabby and wasted; the skin has not, however, the sallow color nor the dry, harsh feeling that it so frequently has in cases of tuberculosis. There may be some edema of the legs and feet, but I have never observed any edema of the chest wall in association with pus in the pericardium.

Severe attacks of syncope not infrequently occur, and a history of these is often obtained from the mother, who states that the lips become blue, respiration extremely rapid and the child seems to be dying; in some of these attacks which I have watched the distress is very great, the heart beating so rapidly that it cannot be counted.

The impulse of the heart is generally to be felt either in the normal situation or in the epigastrium. Percussion of the area of cardiac dulness, either superficial or deep, does not necessarily show any increase of the area of cardiac dulness. In one case in which the presence of pus in the pericardium was suspected, the area of cardiac dullness was most carefully mapped out and at the time of the necropsy needles were inserted at the margin of the dulness and after removing the sternum it was found that the lungs were adherent to the outer surface of the pericardium, so that however much the pericardium was distended the lung could not be displaced laterally, although it might have become collapsed. In the case under discussion, however, the lungs were vesicular. So far as auscultatory signs were concerned no murmur or alteration of the sounds could be detected though they were noted as feeble in one case, but at no time was any pericardial friction audible. With regard to the condition of the lungs, however, it is important to note that in every case marked physical signs were present, in every case there was evidence either of consolidation of the lung or of effusion into the pleura, and in four of these the right lung was affected while in two the left lung was involved. The consolidation of the lung is sometimes apical, sometimes basal. It is attended by numerous catarrhal sounds and owing to the chronicity of disease, the condition is generally attributed to tuberculous infection.

Other conditions, such as enlargement of the spleen, intermittent diarrhea, or discharge from the ear may be present, but in any case these render no aid to the diagnosis of the condition.

In the post-mortem examination of the above cases it was found that both pleuræ were in each case universally adherent. In two of the cases there was a localized pocket of pus, in one situated to the right of the heart and in the other to the left of the heart, and both contained about 1 ounce of pus. In another case there was a patch of dried up purulent material at the root of the left lung and a similar condition was present at the base of the lung in another case. Only one case showed any evidence of tubercle. In nearly every case there was more adhesion between the sternum and outer surface of the pericardium than normal; in three of the cases the area of the pericardium was noticeably increased, while in the two others in which the abscess impinged on the border of the heart the area occupied by the pericardium together with the area occupied by the abscess was considerably in excess of the normal pericardial area. In the remaining case there was no increase in the cardiac area, the lungs being adherent to the outer surface of the pericardium. Although there was in five cases this apparent increase in the area of the pericardium, it had not been detected on physical examination of the chest.

The amount of pus in the pericardium varied from a few drachms to 6 ounces; in some cases it was a thin, opalescent fluid and in others thick pus embedded between masses of lymph. In one case there was considerable infection around the base of the heart and in another there was considerable thickening of the pericardium. There was no hypertrophy and no evidenee of endocarditis in any case; the muscular substance was noted as pale in every case, but no microscopical examination of the substance was made and therefore it is impossible to say to what extent there was fatty change in the heart. In one case there was purulent meningitis and in another purulent peritonitis, in one case there were tubercles scattered over the peritoneum.

It is noteworthy that in four of the above cases there was a localized purulent effusion into the pleura, while out of nine cases of empyema which died in the hospital during the same period of time over which the above six cases of pericarditis were collected, the pericardium appeared normal in all.

From what has been said it is clear that the diagnosis of this disease is one of considerable difficulty, and the cases are most commonly mistaken for tuberculosis or empyema. The diagnosis can seldom be made from the usual physical signs of effusion into the pericardium, and therefore it must be from a general consideration of the characters of the case that the diagnosis must be arrived at. To state the points shortly one may say that a fairly definite date can be fixed for the onset of the disease; the condition of the child generally bears a striking resemblance to that of a child suffering from empyema, the child is pale but not sallow, the limbs are wasted and the muscles flabby and the skin is generally moist and has not the dry and scaly condition so often seen in tuberculosis. The children are extremely liable to severe and sudden attacks of syncope. The temperature has a generally irregular character with rather sudden rises and sharp falls. The rapidity of the heart's beat is always great and seemingly out of all proportion to the general condition of the child, who does not seem especially distressed.

On physical examination of the chest the signs suggest either an effusion into the pleural cavity or tuberculous consolidation of the lung, but as a rule no increase of the area of cardiac dulness can be mapped out although epigastric pulsation may be present.

It might be suggested that the diagnosis might be assisted by the introduction of the exploring needle, but given symptoms or signs that would suggest pericardial effusion it would be much safer to make an incision in an intercostal interspace or resect a rib if necessary rather than pass an exploring needle toward the heart.

One case, however, is reported by Dr. Ashby in which a child, aged 18 months. had dulness and bronchial breathing in the left axilla. The chest was punctured and pus evacuated, but a few days later the child died, and at the necropsy it was found that the pericardium contained some 2 ounces of pus; the pleura was adherent and showed no sign of there having been any recent effusion. In another case, also reported by the same observer, an infant, aged 4 months, had a swelling over the sternum. This was opened and the pus evacuated. The child, however, died, and it was found at the necropsy that the abscess was in connection with the pericardium.

Of prognosis and treatment little need be said, for until diagnosis becomes more accurate it is impossible for rational treatment, namely, the opening of the pericardium and draining the cavity, to be carried out and even then the percentage of recoveries will certainly be small.

It is with regret that one leaves the subject without having been able to point some one sign on which the diagnosis could with any assurance be made; but although this has not been possible, one trusts that the points as above stated may lead one to suspect the condition, and that, at any rate, would be the first step to diagnosis.

OBSERVATIONS ON SUPPURATIVE PERICARDITIS IN CHILDREN.

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PERICARDITIS in children is most often a manifestation of rheumatism, and as such is particularly frequent during the later half of childhood. There are, however, other forms of pericarditis which, although very rare in comparison with the rheumatic affection, are probably less rare in childhood than at any other time of life.

In 769 necropsies on children under 12 years of age, there were 67 which showed non-rheumatic lesions of the pericardium. In 37 of these there was tuberculosis of the pericardium seen as a deposit of grey or yellow tubercle, with or without gross pericarditis. I do not propose to consider tuberculous pericarditis in this paper nor shall I allude further to one case which showed that chronic adhesive form of pericarditis which is associated with so-called rheumatoid arthritis in children.

The form of pericarditis to which I wish to refer particularly here is that which is found in association usually with suppurative conditions elsewhere and which is due to infection of the pericardium with pyogenic microorganisms.

The term "suppurative pericarditis" is not altogether satisfactory as applied to this condition, for the pericardial fluid is hardly sufficiently turbid in some cases to be called purulent, but the term is retained as emphasizing that result of pyogenic infection of the pericardium which is of most importance clinically.

For an accurate conception of the clinical as well as of the pathological relations of suppuration in the pericardium, it is necessary to take into consideration not only the cases in which the fully developed condition of suppuration with thick, opaque pus is present, but also those cases in which the lesion is still in an early stage and the pericardial fluid is only slightly clouded, with but little exudation of lymph.

In 28 cases there was pericarditis, apparently due to pyogenic infection. In 11 of these the pericardium contained actual pus or sero-pus; in 17 the pericardial fluid was only slightly turbid. For descriptive purposes these cases may be grouped thus:

1. Cases in which the pericardial fluid was slightly turbid and contained a few flakes of lymph, either floating free or resting on the large vessels at the base or along the coronary vessels. In some of these the pericardium showed no abnormal vascularity and no loss of gloss; in others there was marked increase of vascularity, especially along the free edge of the auricular appendix, sometimes with a deposit of lymph here and slight adhesions about the base of the heart.

2. Cases in which the pericardial fluid was actually purulent or sero-purulent, with much deposit of lymph, and in some cases extensive obliteration of the pericardial sac by adhesions.

In some of the cases both in group 1 and in group 2 the presence of pyogenic microorganisms in the pericardial fluid was demonstrated by bacteriological examination; in others the associated lesions made such infection almost certain.

The observations recorded here were made at the Hospital for Sick Children, Great Ormond Street, where children up to the age of 12 years are admitted; and it is noteworthy that of the 17 cases in group 1, 12 occurred within the first three years of life, while all of the 11 cases with pus or sero-pus in the pericardium were under 3 years of age, so that no fewer than 23 out of the 28 cases occurred within the first three years of life.

In comparing the cases which occurred in these younger children with those in older children some difference is noticed in the character of the associated lesions, or rather in the relative frequency of these lesions, as may be seen from the following table:

ASSOCIATED LESIONS WITH PYOGENIC INFECTION OF THE PERICARDIUM.

Under 3 years of age (23 cases).		Over 3 years of age (5 cases).	
Empyema or acute pleurisy, complicating pneumonia	21	Empyema	1
Pyemia with acute pleurisy	1	Pyemia without pleurisy	2
Adherent pleura with tuberculous cavitation of lung	1	Adherent pleura with tuberculous cavitation of lung	1
		Double acute pleurisy complicating lymphadenoma	1

Out of the 28 cases 24 showed empyema, thick lymph on the pleura, or acute pleurisy; in 17 the pleural lesion was present on both sides of the chest; in 4 the pleurisy was active on one side only, but was accompanied by adhesions over the opposite lung; only 3 cases showed affection of one pleura alone; in all these 3 cases there was an empyema on the right side.

In addition to the lesions mentioned in the table above, 7 of the cases with empyema or acute pleurisy complicating pneumonia showed also suppurative meningitis, and 4 of these cases (including one of those with suppurative meningitis) showed an early acute peritonitis. In 4 of the cases with affection of the pleura on both sides the inflammation seemed to have spread from the pleura to the mediastinum, producing an adhesive mediastinitis.

The pericardial fluid was examined bacteriologically in 13 cases with the following result:

	Cases.
Pure growth of pneumococcus	6
Almost pure growth of pneumococcus (contamination probably accidental)	1
Diplococci in pericardial fluid almost certainly pneumococci (which were found in pure growth in each case in the pleural cavity)	3
Coverslip preparation only, apparently typical pneumococci	1
Staphylococcus pyogenes albus	2

Out of the 13 cases, therefore, 11 appeared to be due to pneumococcal infection and of these 11, six were advanced cases in which the fluid was actually purulent; it is noteworthy, however, that 3, including 2 which showed pure growth of pneumococci, were among those which showed only slight turbidity of the serum with a few flakes of lymph floating in it and no increased vascularity or roughening of the pericardium. Of the two cases in which staphylococci were found one was the case with acute pleurisy as a terminal complication of lymphadenoma, the other was a case of empyema following pneumonia (recent lymph in the peritoneum in this case gave a pure growth of pneumococcus).

In 15 cases no bacteriological examination of the pericardial fluid was made, but a large proportion of these were almost certainly due to the pneumococcus; in two pus from the accompanying empyema was examined and showed pure growth of pneumococcus, in four others the associated empyema or acute pleurisy had followed a lobar pneumonia and in four others the appearance of the associated pleural lesions (empyemata, with suppurative meningitis also in one case) made it at least probable that they were due to the pneumococcus, as one has usually found in other cases with similar appearances.

So far therefore as can be judged from 28 cases it would seem that the pneumococcus is the microorganism which is most often responsible for this form of pericarditis in children and that the change in the pericardial fluid with such infection may vary from the slightest cloudiness up to actual purulency.

The frequency of pleurisy, recent or old, in association with the pericarditis was very striking but there was some variation in the character of the pleural lesions. In some of the cases there was a recent acute pleurisy with much shaggy lymph on the pleura and little or no fluid in the pleural cavity; in others there was slightly turbid serum or actual pus in the pleural cavity; and in others again the pleuræ had already become adherent, either spontaneously or as the result of drainage by operation, but in all such cases there remained either a loculus containing pus or a patch of lymph.

A study of those cases in which the pericarditis is caught in its earliest stage shows that while the pericardial infection may occur at a very early period of the disease, it may on the other hand take place at a very late stage of the pleural inflammation. In one case, in which the slightly turbid pericardial fluid gave a pure growth of pneumococcus, there was very recent acute pleurisy with some lymph and only slightly turned serum in the pleural cavity, and death occurred on the fourth day after the onset of the illness; while in another case in which death occurred five and a half weeks after the onset of the illness, there were dense adhesions all over both lungs and the only trace of active inflammation in the pleura was a patch of unabsorbed lymph over a portion of the left lung posteriorly. In the latter case the pericardial fluid was slightly turbid, with some flakes of yellow lymph about the vessels at the base and very slight adhesions here, but no trace of pericarditis over the ventricles; the child died of suppurative meningitis, and so far as could be judged from coverslip preparations alone the pneumococcus was present in pure growth in the pleural lymph and also in the meningeal pus and pericardial serum.

In such a case it seems likely that the infection both of the pericardium and of the meninges was only of a few days' standing, and probably both were the simultaneous result of a blood infection by the pneumococci in the pleural lymph; moreover, this infection occurred so late that it was probably secondary rather to the pleural lesion than directly to the original pneumonia which had long since subsided.

In several of the cases it was observed that the patch of lymph or loculus of pus remaining in the pleural cavity was so situated that a direct infection of the pericardium seemed very unlikely if not impossible; the presence of suppurative meningitis also in 7 of the cases made it almost certain that in these at least a blood infection had occurred, and that the pneumococcal pericarditis was, in some of the cases, the result of such a blood infection rather than of direct extension from the pleura.

In 2 at least of the 5 cases which were not associated with lesions suggestive of a pneumococcal origin a blood infection seemed certain, for there was general pyemia but no pleural inflammation and in the cases with tuberculous cavitation it was at least possible that a similar blood infection had occurred by pyogenic microorganisms from the pulmonary cavity.

An interesting feature of this variety of pericarditis is the slightness or absence of dilatation of the heart; in several of the cases I have specially noted this point, and even when the heart was covered all over with shaggy lymph there seemed to be little or no dilatation; this feature is noticeable also in other forms of non-rheumatic pericarditis and is in striking contrast with the marked dilatation which almost always accompanies rheumatic pericarditis, a point which suggests that the rheumatic infection has some special action upon the myocardium which is lacking in other varities of pericarditis.

It is hardly within the scope of this short article to consider the clinical aspects of suppurative pericarditis, but I may perhaps be permitted to point out the practical bearing of these observations upon diagnosis and treatment.

Suppurative pericarditis is much more likely to occur in infants and young children than in the later half of childhood. It is almost always part of a pneumococcal infection which in most cases has begun with pneumonia and has affected the pleura. The presence of lymph or of turbid serum in the pleura involves a risk of suppurative pericarditis no less than does an actual empyema, and the infection of the pericardium may occur within a few weeks after the onset of the pneumonia or not until several weeks have elapsed and only the empyema or pleurisy remains.

In any case therefore where exploration of the chest shows turbid serum or pus, especially if on bacteriological examination the fluid is found to contain the pneumococcus, free drainage, by resection of a rib in most cases, should be provided with as little delay as possible. The fact that an empyema has already been present several days or weeks or that there seems to be only a very small and localized collection of pus, is no justification whatever for deferring operation. So long as any such infective material remains shut up in the chest the child is in hourly risk of further infection, which may involve the pericardium or the meninges and in either case is likely to prove fatal. It is to be remembered also that it is not only the fluid sero-pus or pus which must be evacuated but also the lymph which is no less infective.

Bearing in mind this infectivity of the lymph I have sometimes thought that in cases where with pneumonia there are signs suggestive of fluid but the exploring syringe gives a negative result, it might sometimes be wise to explore by incision in the hope of evacuating thick lymph and so reducing the risk of suppurative pericarditis and suppurative meningitis. Be this as it may, it is a striking fact that in every case where death occurred with infection of the pericardium in spite of previous drainage of an empyema there was either a loculus of pus or a patch of lymph remaining on one or other side of the chest shut off by adhesions and there could be little doubt that this was the source of pericardial infection.

In the diagnosis of this condition it is worth remembering that there is usually no great quantity of fluid in the pericardium; in most cases where there was turbid serum or sero-pus the quantity did not exceed ℥j to ℥jss, in one case with sero-pus it amounted to about ʒij, in another with almost opaque pus there was only about ℥j; the largest amount found in the cases recorded here was about ℥v. This fact together with the absence or slightness of cardiac dilatation accounts for the very slight increase of cardiac dullness which is observed during life in some cases. Another point in the morbid anatomy of this condition which is of importance with reference to diagnosis is the formation of extensive adhesions of the pericardium in some cases; in two of these cases recorded here thick pus was limited to the base of the heart by dense adhesions and an exploratory puncture in the usual position would probably have given a negative result so that the condition would have been overlooked. Exploratory incision after removal of a portion of one of the costal cartilages just to the left of the sternum seems to be a much more satisfactory method of exploration if circumstances make it possible.

Lastly, as to the possibility of recovery in a child with this form of pericarditis it is clear now that with timely drainage of the pericardium life may be saved, even although the pericardial fluid has become actually purulent. It is evident also from some of the cases in which extensive adhesion has occurred and pus or sero-pus has become limited to a small loculus, that there is considerable effort at spontaneous recovery by obliteration of the cavity and absorption of the exudate. In one case (not included in the above series) it seems almost certain that a more complete recovery from pneumococcal pericarditis had occurred; this was in a boy aged 7 years, who died of acute intestinal obstruction by strangulation of the ileum under a fibrous band passing from a caseous mesenteric gland to the cecum. He had undergone an operation for an empyema on the right side four years previously. Post-mortem the right pleura was densely adherent all over, the pericardium showed over the right auricle and the base of the right ventricle some thick, greyish opacity with slight adhesions; the rest of the pericardium was normal. There was no trace of tubercle past or present anywhere in the chest. It seems most probable that in this boy the pericardium had been infected at the time of the empyema but that the pericarditis had subsided, leaving only the adhesions and thickening.

So far, however, as one can judge from experience in the post-mortem room, such a result must be very rare; and when once the pericardium has become infected by pyogenic micro-organisms there is but little hope of saving life unless the condition is diagnosed early and treated by free drainage. In many cases the presence of other lesions, such as suppurative meningitis and peritonitis, as part of a general blood infection makes the prognosis very bad.

There is, however, good reason to believe that we may do something in the way of prophylaxis, and an important step in this direction is the realization of the danger of secondary infection from pneumococcal exudation, especially in the pleural cavity. It is not only pus, but also turbid serum or merely lymph in the pleural cavity which may be the focus of infection, and it is by early diagnosis and speedy evacuation of this infective material that we may hope to reduce the risk of pericardial infection.

DIVIDED EXAMINATIONS AUTHORIZED BY THE BOARD OF REGENTS OF THE STATE OF NEW YORK.

The Board of Regents of the University of the State of New York has instructed the Board of Medical Examiners that hereafter medical students or graduates who wish to be registered may be examined after two years of study at an approved medical school, in hygiene, anatomy, physiology and chemistry, leaving the remainder of the examinations to be taken at the conclusion of the course of study. This change has long been desired, and will leave the students free to devote more time to clinical work during the last two years of the course than has heretofore been possible. We believe the work of the student will be better done and the fear of the examination will soon be lost.—*Albany Med. Annals.*

ON ESSENTIAL OR TOXEMIC DROPSY; DROPSY WITHOUT ALBUMINURIA.

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CASES of general anasarca are occasionally met with, chiefly in children, but sometimes also in adults, which exactly resemble cases of Bright's disease but in which there is no albumin discoverable in the urine and no abnormal condition of the heart to account for the condition. These have been called cases of essential or idiopathic dropsy. The disease has met with little recognition in the general textbooks.

Fagge[1] says that in such cases one may fairly doubt whether the kidneys are healthy, although no clinical evidence to the contrary can be obtained. Bristowe[2] probably includes them in the dropsy which he ascribes to anemia. Osler[3] states that there are occasional cases of acute Bright's disease with anasarca in which albumen is either absent or present only as a trace. Dickinson[4] says, "Albuminuria with nephritis is so nearly constant that an exception has the interest of a curiosity," and relates the case of a child who died of dropsy without albuminuria. Duckworth[5] wrote a paper on scarlatinal dropsy with little or no albuminuria, and Goodhart[6] mentions it also, Both these authors give several references to former literature.

With the exception of Bristowe, all the above writers are considering only an abnormal nephritis. But Donkin[7] speaks of dropsy occurring with healthy kidneys as a separate condition; Ashby and Wright[8] ascribe it to anemia, and Rilliet and Barthez[9] devote several pages to its description as an independent disease. Wagner[10] has written a careful paper on it, and describes cases both in children and in adults. It is not mentioned by Baginsky, Meigs and Pepper, or Starr and Westcott in their textbooks on children's diseases.

A case of this kind was read by me before the Clinical Society this year and will be found in the forthcoming volume of the *Transactions*.

A boy, 2 years old, was admitted for a doubtful slight ascites which was suspected to be tuberculous peritonitis; the signs disappeared but the boy remained in the hospital for four months for debility and some anemia. He developed dropsy, passed very little urine in which no albumen or formed elements could ever be detected, and died with vomiting and gradual exhaustion. At the post-mortem examination exudation was found in the glomeruli and in the convoluted tubes, with apparently some shedding of the epithelium.

Dr. Donald Hood allows me to quote a case that is under his care:

A house decorator, aged 38, got wet through, caught cold, and had pain down the legs. He kept at work for some days, but had shortness of breath and about the fifth day noticed swelling of the legs, body and face. He had had a similar attack two years before; the urine gave no biuret reaction and no precipitate with heat or nitric or salicylsulphonic acid, but contained a large amount of hematoporphyrin.[11] The heart and the retinæ were natural; in the first few days he passed a large amount of urine and the dropsy quickly disappeared; the urine was normal in amount when he was discharged.

Causes.—Rilliet and Barthez have seen 78 cases, of which 35 were primary, all preceded by definite chill, and 43 were secondary to other diseases, 25 of them to scarlatina. But in these secondary cases also, chill, or at any rate exposure, was a frequent antecedent. The children were always anemic or delicate and all were hospital patients.

Wagner could not trace any definite cause in some of his cases but in others, chiefly adults, there was a distinct history of chill. Many years ago Basham[12] and Taylor[13] described cases in adults after exposure to cold. The same history was given in Dr. Donald Hood's case.

Course.—Some cases begin acutely with chills, fever, *malaise*, pains in the back and a furred tongue. Some have fever before the dropsy. The fever lasts for a few days only. In others the dropsy comes on rapidly, but there is no fever. Other cases, especially those which occur in the course of scarlatina or other illness, begin insidiously without fever or pain. To the general dropsy of the skin may be added hydrothorax and ascites. Bronchitis, pneumonia, diarrhea and vomiting are also noted as complications.

The dropsy usually begins in the legs, but sometimes attacks the face and arms at the same time. It exactly resembles renal dropsy in appearance. Most cases recover under six weeks, but some last longer. Rilliet and Barthez had 14 deaths in 63 cases. Wagner lost 3 out of 6 children and the two adult cases recovered. The French physicians have seen death preceded by cerebral symptoms, convulsions, headache and drowsiness. Wagner has noticed that the disease recurs.

The urine is in some cases extremely scanty, in others normal, and in others excessive in amount. Its density varies also; it contains no albumen. Dr. Hood's case did not even give a biuret reaction, and under the microscope there are either no formed elements at all or at most a hyaline cylinder or two or a few blood cells (Wagner). A curious rarity, hematoporphyrinuria, existed in Dr. Hood's case.

Morbid Anatomy.—There are no constant lesions. The heart is sometimes dilated and in cases with hydrothorax the lungs are of course collapsed. In a case of Wagner's the lymph follicles and Peyer's patches were red and swollen; the spleen and glands are usually normal.

The kidneys are normal to the naked eye. Wagner found some of the collecting tubes plugged with hyaline cylinders but no other morbid change. I found exudation in the glomeruli and in the convoluted tubes as well. There was no detailed account of microscopic examinations by other authors but their statements imply that they were made with negative results.

Pathology.—Three questions present themselves. Is the disease really nephritis? Is it dependent upon the anemia merely? Is it a condition distinct from either?

1. Both in symptoms and in causation by cold and scarlatina the disease closely resembles nephritis. Moreover, there are undoubted cases of post-scarlatinal nephritis without albuminuria, in which *post mortem* the kidneys show the lesions typical of ordinary Bright's disease. Henoch relates such. Thus the strongest suspicions are aroused. Yet the total absence of albuminuria from first to last and the testimony of many trustworthy physicians that the kidneys have been found free of disease, cannot be set aside. It must at any rate be allowed that there are a good many cases of general dropsy which are not cases of nephritis.

2. We frequently find slight edema about the ankles in cases of anemia and occasionally a case of pernicious anemia will terminate with great general dropsy. It is possible there-

fore to suppose that in these cases the dropsy is dependent upon the anemia, and evidently Bristowe and Ashby and Wright take that view. But quite apart from the question of the immediate causation of dropsy in anemia, which I will discuss directly, it is quite certain that in some cases the anemia is not present at all and in others it is by no means of that degree that would naturally account for severe anasarca. I see no reason to separate the adult cases, which are certainly rarer but equally striking, from those in children, and it is not to be supposed that a grown up man in full work after getting wet through suddenly falls a pray to an anemia such as to produce anasarca (see especially one of Wagner's cases).

3. I think we shall be better prepared to consider this condition if we first ask ourselves frankly how we should explain the anasarca even if we believed it was due to nephritis or to anemia. The fact is we cannot easily explain it in either case. At the recent discussion at the Pathological Society the unsatisfactory explanation of edema was that it is due to excessive filtration through capillaries damaged by some toxic condition of the blood. No one has ever seen the damage and no one has ever demonstrated the toxin. But many a hypothesis does very well to go on with and this will do for the present. I am myself very much inclined to think that it is not the mere loss of blood cells in anemia nor the mere failure of excretion in nephritis that produces this toxic condition, but that there is some original toxic poison, such, for instance, as that of scarlatina, which produces not only the nephritis or the anemia but also the edema as well, the latter being not consequent upon, but coincident with. the inflammation of the kidneys or the loss of the blood cells.

We know of two definite and frequent causes of acute nephritis—they are scarlatina and chill. No one doubts that in scarlatina the nephritis is produced by a microbic poison. Probably most of us believe that chill also is a microbic invasion, which cold has rendered possible by lowering resistance. Both will then be toxic conditions of the blood. It is not unreasonable to suppose that in certain cases they may produce anasarca without inflaming the kidney, and in others may produce both anasarca and nephritis. The latter are the ordinary cases of Bright's disease, the former are the cases I have been describing.

A curious parallel may be found in a paper by Lassar.[14] A man of 31 came down to the post-mortem room with general dropsy. He had had albuminuria and was diagnosed by Friedlander as a case of nephritis. The disease was consequent on a universal rubbing with petroleum, which had been practised to cure him of scabies. No disease could be detected in the heart, lungs, or kidneys by the naked eye, and the "most scrupulous" microscopical examination of the kidneys gave a negative result. Here general dropsy and albuminuria were produced by an absorption of poison through the skin.

Treatment.—Wet packing, hot water baths and hot air baths have been employed to remove the dropsy by sweating. For the anemia iron has been given. I should myself be inclined to give, along with some syrup of the iodide of iron, drop doses of the liq. arsenicalis, and to endeavor by milk and by digitalis to increase the flow of urine, which is the natural way both to decrease dropsy and to purify the blood.

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A SANATORIUM FOR TUBERCULOUS CHILDREN IN ROME.

On the occasion of the birth of the daughter of the King of Italy, he donated 200,000 lire ($40,000) toward a fund for the erection of a sanatorium for tuberculous children.—*Albany Medical Annals.*

ULTIMATE RESULTS OF TENDON GRAFTING IN INFANTILE PARALYSIS.

By Sinclair White, M.Ch., F.R.C.S.,
Surgeon to the Sheffield Royal Hospital; Lecturer on Surgery, University College, Sheffield.

THE idea of reinforcing the tendons of paralyzed muscles by grafting on to them the displaced tendons of neighboring healthy muscles after severance from their distal insertions belongs to Nicoladoni, who, in 1882, published an account of a case of paralytic talipes calcaneus so treated. In this country Nicoladoni's work excited little attention until three years ago, when Mr. Frederick Eve, in an able and singularly modest communication brought the subject before this Association. Latterly several modifications of the original operation have been devised, the most noteworthy of which is that described by Vulpius, in which Nicoladoni's method is reversed—the distal end of the divided paralyzed tendon being displaced and stitched to a normally situated healthy muscle. The operation, while most often undertaken for the relief of deformity in old-standing cases of infantile palsy, is applicable to other paralytic conditions, such as that due to traumatic nerve lesions or to the direct destruction of muscular tissue.

My experience of tendon grafting extends to 11 cases, 1 of which concerned the extensor muscles of the thumb, while the rest were examples of foot palsy—for the most part of the anterior tibial and peroneal muscular groups. The deformity varied more in degree than in character, the prevailing feature being a talipes equinus with more or less inversion of the sole of the foot, but in two cases it was a pure equinus. The ages of my patients varied from two years up to eighteen years. In all the paralytic condition appeared to have been due to an attack of infantile paralysis and in all there was not only obvious wasting of the affected muscles, but also shortening of the tendo Achillis.

An exact history respecting the date of onset was seldom forthcoming, but several of the cases were probably congenital. All of my cases have been operated on in the Sheffield Royal Infirmary in the last three years. In every instance I have followed the method of Nicoladoni, varying the details to suit the requirements of each case. Lengthening the tendo Achillis with the transference of a slip from its outer side to the tendons in front of the ankle formed an essential part of each operation, and in two cases represented the entire operation. The next most frequent procedure was to detach the tibialis posticus from its insertion into the scaphoid bone and to bring it to the front above the internal malleolus where it was anchored to the tendon of the extensor proprius pollicis or to that of the long extensor of the toes. After operation the limb has been kept at rest on a splint for three weeks and then passive movements and massage have been commenced, the foot being still supported in the intervals between massage. Two or three weeks later the patient was allowed to practice movements of an orderly character.

Results.—The case of thumb palsy in which the tendon of the flexor carpi radialis was transferred to the paralyzed extensor tendons shows an appreciable but not a marked improvement and should, I think, be recorded as a failure. Of the 10 foot cases, 1 has been lost sight of and 2 have been operated on so recently that they are not available for the purposes of this paper although they promise well. Six of the remaining 7 are greatly benefitted by the operation. In 3 cases the improvement is so great that it requires an educated eye to detect anything abnormal in their method of walking, while in the other three the deformity, although not entirely removed has been greatly reduced, the patients walking on the sole of the foot with more or less pointing of the toes, whereas previous to operation the outer side of the dorsum of the foot came in contact with the ground. In each of these three cases the ankle-joint can be flexed through rather less than half its normal range and in advancing the leg (in walking) the foot is carried abnormally outwards to enable the toes to clear the ground. As evidence of the improvement in walking power, I may state that one of these patients recently walked without assistance of any kind eight miles to see me at the Royal Infirmary, whereas before operation she could barely accomplish with the aid of a stick a distance of one and a half mile. In several of my cases the disparity in the circumferences of the sound and affected legs has been slightly reduced; but of course in all there is necessarily failure to return to the normal, both as regards appearance when naked and in strength. My seventh case is much less satisfactory and should, I think, be considered a failure as the child, aged 4 years, requires the aid of elastic bands to prevent the foot from falling inwards, and although he can now bring the sole of the foot in contact with the ground, I attribute the improvement in this respect entirely to lengthening of the tendo Achillis.

The exigencies of time forbid a detailed account of each case I have operated on, but I may perhaps be permitted to relate the particulars of my first case, prefacing my remarks by stating that it illustrates the method I have most frequently practised and is an example of the best results I have obtained.

B. D., aged 8 years; paralysis of the right anterior tibial and peronei muscles at the age of 16 months.

State on Examination.—Heel drawn up; front of leg and dorsum of foot form an angle of 130°; sole of foot inverted; no power to flex ankle-joint; affected leg cold and ½ inch shorter than its fellow; circumference of right calf 2 inches less than that of the left; stands unaided with difficulty, resting the outer side of the dorsum of right foot on the ground; cannot walk without assistance, and drags the toes of the right foot.

Operation—November, 1898. (1) Vertical incision over the tendo Achillis 3 inches long; tendon exposed and divided longitudinally into three equal parts, two inner parts utilized for lengthening the tendon by dividing them at opposite ends and allowing them to slide on one another until the requisite amount of lengthening had been obtained when they were sutured together; outer third severed from its attachment to the os calcis; (2) incision of skin over the insertion of the tibialis posticus and division of tendon; (3) vertical incision over the course of the tibialis posticus tendon 1½ inch above the internal malleolus, tendon exposed and its distal end withdrawn; (4) transverse incision over anterior tibial tendons just below the annular ligament, tendons of extensor proprius pollicis and of extensor longus digitorum exposed and identified by pulling on them; (5) Kocher's artery forceps passed under the skin from incision No. 4 to incision No. 3, and the tendon of the tibialis posticus withdrawn and united to the tendon of the extensor proprius pollicis; (6) forceps again passed subcutaneously from incision No. 4 to the upper end of incision No. 1, and the outer third of tendo Achillis withdrawn and sutured to the tendon of the extensor longus digitorum; (7) skin wound sutured and limb placed on a back splint with footpiece so that the foot was at right angles to the leg.

Subsequent condition two years and eight months later. The ankle-joint can be flexed to almost the normal extent and the tendency to inversion of the sole of the foot has disappeared. The heel comes properly in contact with the ground, and the boy walks to school a mile and a half distant without discomfort and without, to the untrained observer, appreciable deformity. There is still a difference of 2 inches in the calf measurements, but the circulation and general nutrition of the affected leg are much improved.

Many causes contribute to the disparity in the results obtained from tendon grafting. Foremost among these must be placed the degree and extent of the paralysis. Where only one or two muscles are partly or wholly affected a good result should be the rule. On the other hand, "we cannot make bricks without straw," and it is impossible to accomplish much good if the bulk of the muscles of a limb are affected. The least promising cases are those in which the unparalyzed muscles, from disuse, are badly developed, and where there is marked evidence of defective innervation, as shown by excessive arrest of growth, a habitually cold skin and other signs of deficient blood supply. Possibly better results might be gained in these cases if a course of massage, passive movements and galvanism preceded operative interference. Generally speaking it is better to defer operation until the age of four years or later. Earlier than this the small, immature tendons are difficult to manipulate, and more important still, the child has not obtained complete volitional control over its muscular tissue and is less able to practise movements of an orderly character and unusual nature than an older child.

The operation requires an accurate knowledge of the anatomy and functions of the muscles concerned and is somewhat tedious to perform but presents no special difficulty. The tendon of the reinforcing muscle should be cut squarely and as near to its insertion as possible. It should be of sufficient length to reach the point selected for its insertion into the paralyzed tendon without undue tension and yet be sufficiently taught to assist in retaining the foot in its improved position. Some writers advocate a preliminary rectification of the deformity, but in many instances this cannot be accomplished until the unparalyzed opposing tendo Achillis has been severed, and under any circumstances it can be done quite easily and with the employment of little force at the time of operation.

For tunnelling under the skin I make use of a fine pair of Kocher's artery forceps. A gossamer silkworm suture is passed twice through the end of the reinforcing tendon, and after being lightly tied is seized by the forceps and withdrawn. Gentle traction is next made on the suture and the tendon coaxed through the tunnel to its new destination. The paralyzed tendon is now slit longitudinally at the point selected for grafting, and the reinforcing tendon drawn through it and fastened by the silkworm, the ends of which are threaded on fine, straight needles, which transfix both tendons. The utmost care should be exercised to secure firm and neat junction of the reinforcing and paralyzed tendons, and until good union has resulted it is imperative that the foot should be maintained in the corrected position by a splint or some other mechanical device. Whether a part only or the whole of the reinforcing tendon shall be transferred depends to some extent on the position and shape of the tendon; thus it would be well-nigh impracticable to deal with a portion of the tendon of the tibialis posticus, whereas the tendo Achillis lends itself admirably to transference of a portion of its bulk. Generally speaking, if only a portion of a tendon is transferred, the remaining part should be lengthened, otherwise it may be impossible to restore the foot to its normal position. The tendons of paralyzed muscles are usually diminutive in size and less tough than normal tendon tissue, and occasionally are difficult to find owing to distortion of the anatomical landmarks of the region; but, when found, their identity can always be established by pulling on them and noticing the effect produced. If from any reason the desired paralyzed tendon cannot be found, the operator may fall back on Kumik's expedient of attaching the reinforcing tendon to a properly chosen site on the periosteum.

As the operation merely distributes in a more advantageous fashion the unparalyzed muscular tissue, it is quite obvious that, after even the best possible results have been obtained, the limb must necessarily remain a weak one. On the other hand, the general nutrition of the operated leg is greatly improved in successful cases by reason of the more active movements the limb is capable of performing.

The transference of a portion of its force from the stronger to the weaker of two opposing muscular groups is a perfectly logical procedure if we bear in mind that a voluntary muscle, or even a portion of a voluntary muscle, is capable of being educated to act independently of the muscular group with which it is normally associated. But such education of a transferred muscle is necessarily a work of time, hence we find that the maximum benefit accruing from the operation is not attained all at once.

It may, I think, be fairly claimed for tendon grafting that it is a valuable addition to our means for treating a class of cases which, previous to its adoption, were alike objects of pity and a reproach to our art.

THE STATE ANTITOXIN LABORATORY.

A good building has been secured for the establishment of a state antitoxin laboratory in Albany. Dr. H. D. Pease, of the Sheffield Scientific School, Yale University, has been appointed Director. The animal house will be provided with the most perfect hygienic conditions attainable for such purposes and will be supplied with about fifteen horses for the manufacture of serum. The Commissioner of Health proposes to supply state institutions with diphtheria and other antitoxins free of cost and also to furnish these remedies to municipalities which are not already provided with a similar laboratory for patients who are unable to buy them. These new departments are intended to supply to all the health officers throughout the state the same facilities for investigation, diagnosis and treatment of infectious diseases as are now supplied by the City of New York.—*Albany Med. Annals.*

A GERMAN ORTHOPEDIC SOCIETY.

It is proposed to found a German Orthopedic Society, and a meeting for that purpose will be held at Hamburg at the time of the meeting of the Association of Scientists and Medical Practitioners in September. Dr. Hoeftman, of Königsberg, has in the name of leading German specialists in orthopedic surgery sent out invitations to all presumed to be interested in the subject.—*Brit. Med. Jour.*

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting April 9, 1901.

The President, Dr. THOMPSON S. WESTCOTT, in the chair.

Dr. L. EMMET HOLT addressed the Society on **Some Forms of Indigestion in Infants and Young Children, with Especial Reference to their Dietetic Treatment.**

J. P. CROZER GRIFFITH stated that one of the main characteristics of the suggestions in treatment that Dr. Holt had made was care as to small details. Dr. Griffith insisted upon the importance of this, and stated that he believed that Dr. Holt's success in the management of these cases was largely due to his carefulness in investigating all the details of the baby's life and his appreciation of the importance of many factors which are often overlooked. He had felt especially pleased at Dr. Holt's insistance upon the fact that it is not always bad food that causes digestive disturbance but is rather in many instances some peculiarity of the baby itself. The food may seem to be entirely suited to the baby's age and condition from a theoretical standpoint, but while it is, as Dr. Holt stated, no trouble to feed a baby in good health, a sick baby does not by any means conform to rules in the diet which it can take, and one must study the individual patient and not attempt to go by any regular plan. One comes after a certain amount of experience to accept or reject a method of feeding in a special case, not so much on account of special theoretical rules, but rather because experience teaches one that certain methods will do in one case but will be unsuccessful in another. Dr. Griffith also expressed his appreciation of Dr. Holt's statements concerning mild constipation in infants when no evidence of distress results from the constipation. In his opinion a tendency to constipation without any signs of digestive disturbance usually means a good digestion and he insisted that it is often of most importance not to allow one's self to be persuaded to attempt to overcome this constipation.

Dr. E. E. GRAHAM.—I was much interested at one point which I noticed in the results of several of Dr. Holt's cases. I should judge from his reports that he is quite willing to put a child with indigestion on a milk mixture as soon as it comes under his care. In Philadelphia we are opposed to such a measure and I think it is a general practice here among pediatrists to stop the use of milk for four or five days or perhaps more if an attack of indigestion occurs and meanwhile to use albumin water, beef juice, or similar foods. In spite of the recommendations made by some others, particularly Dr. Rotch in some of his writings, Dr. Graham stated that he preferred to use sterile water for about twenty-four hours, after this albumin water for forty-eight hours or so and then beef juice; a day or two afterward cautiously beginning with a very weak milk mixture, preferably peptonized. He believed that peptonization is not used with sufficient frequency; it gives a certain amount of rest to the digestive organs and is often very valuable in the treatment of acute attacks. He agreed with Dr. Holt in considering rectal feeding a valuable temporary procedure. He had also had very good results in a considerable number of cases from gavage and desired to learn Dr. Holt's opinion concerning this measure.

Dr. Alfred Stengel stated that while we have not reached a period where fundamental principles in the feeding of infants have become well established there are to his mind several definite points in the management of digestive disturbance in infants and young children that were suggested by Dr. Holt and that are so important as to deserve to be called fundamental principles. One of these is the importance of avoiding an undue quantity of food and a consequent severe mechanical strain upon the stomach. In the management of digestive disturbance in adults reduction in the amount of food taken has grown to be a well established principle. Different physicians in treating exactly similar cases of disturbance of the stomach or bowels often use diets which differ largely; but if the diet is well regulated and the amounts ordered are sufficiently small it is usually found that the result of the dieting is good. The really essential point in ordering a diet is to think first of ordering foods which will be suited to the individual case, and of ordering quantities which are sufficiently small to avoid further overtaxing a stomach and intestine which are already more or less overtaxed. The same principle should be used in managing children much more frequently than is the case. His experience has been that the proteids and fats must be reduced in direct relation to the amount of reduction of general nutrition and strength. He has found necessity for the entire withdrawal of milk for a time. Another fundamental principle upon which he insisted was that it is wrong to keep a child for any considerable period upon a food consisting almost solely of carbohydrates, a mistake which is often made, as weak carbohydrate foods are likely to be borne well by the digestive tracts of children who have been upset by milk mixtures. The general nutritional disturbance resulting is often a more serious matter than the original disturbance itself.

Dr. D. J. M. Miller emphasized the importance of Dr. Holt's statement, that artificial feeding is easy when one has the opportunity to control the baby's diet from the first. There is a general impression that young babies cannot properly digest cows' milk. This impression in almost all cases is entirely erroneous. If the baby is in good health and if the feeding is begun at an early period before there has been any opportunity for disturbing the child's digestion artificial feeding is not at all difficult. There is also a general impression that breast milk is in some mysterious way the best food for infants even if it seems to cause gastrointestinal disturbance. Dr. Holt has stated that this also is an erroneous impression, and that if a baby is not gaining in weight and has continuous digestive disturbance nursing should be stopped and artificial feeding undertaken. Dr. Miller would go further than this, and believes that even if there is a continued gain in weight, even 6 or 8 ounces a week, as is often the case, nursing should be stopped if marked symptoms of indigestion continue in spite of proper regulations of the time of nursing and proper treatment of the digestive symptoms. One should always fear that obstinate disease of the gastrointestinal tract may be caused by breast-feeding in these cases when protracted over any considerable period, often rendering the feeding of such infants an extremely difficult matter after weaning has taken place. Dr. Miller also stated his agreement with Dr. Holt, that milk mixtures are very often made too dilute, simply because the stools show a few curds or there is slight colic. Our aim should always be to give as strong a mixture as can be taken without disturbing the digestion too much.

Dr. Westcott emphasized the importance of a high percentage of fats in causing digestive disturbance. He considers it often quite as essential to use a low fat percentage in milk mixtures as it is to use a low proteid percentage. In some cases under his observation cream has been very badly borne, and in several instances it was noticed that a very small quantity of cream added to the mixture caused decided disturbance of digestion. He mentioned one case in which every time 3 or 4 drops of cream were added to a food mixture pain and decided gastric disturbance were produced. A curious fact in this case was that while the percentage of fat could be raised by the gradual increase in the amount of whole milk, the addition of cream to the mixture could not be borne, even though the percentage of fat thus produced was really less than when whole milk was used. In all these cases the cream was perfectly fresh, being skimmed from fresh milk, so that no question of an increase in the bacterial content of the cream mixture over that of the milk mixture could be seriously entertained.

Dr. F. A. Packard stated that he was much relieved to notice Dr. Holt's omission of any statement that the bowels should be washed out repeatedly during attacks of acute indigestion or acute inflammation of the digestive tract. He believed that this procedure had been used far too frequently, and was in most cases absolutely overdone in the individual case. Irrigation of the lower bowel several times every day he considered to be a factor which often had a very evil influence in acute cases, and the procedure is too commonly used in the more chronic cases.

Dr. Holt, in reply to Dr. Graham stated that cases of acute indigestion were not included among those discussed in his paper, and that he did not think it wise in most cases to continue the use of milk under such conditions. Dr. Packard's remarks concerning lavage of the bowel were wholly in accordance with his own experience. This procedure was often abused. He had only lately seen an infant that had been passing a moderate amount of mucus from the bowel but with absolutely no other digestive disturbance, whose bowels had been washed twice a day for four months, first with a saline solution, then tannic acid solution. The primary rule in the treatment of all disease in infants should be to do no harm and to employ just as little active treatment as is reasonable in the individual case. The mistake usually made is too much treatment—not too little. Particularly is this true of many intestinal forms of disease. The value of rest is too little appreciated. Dr. Holt also stated that he was much interested in the remarks of Dr. Miller concerning the continuance of nursing when there were symptoms of indigestion, but notwithstanding these still some gain in weight. If the gain in weight was slight and decided symptoms of indigestion continued he felt convinced that the nursing should be stopped after reasonable trial if other measures had been useless. He was of the opinion that weaning was often delayed too long in these cases. A study of infant feeding can certainly not be best carried out in hospitals; after making prolonged and repeated trials in the treatment of chronic digestive disturbances in young infants in hospitals Dr. Holt had come to believe that this is practically hopeless. The rule in the Babies' Hospital in New York with reference to such cases is to keep the infant only long enough to determine the best general method of feeding in the individual case, and then if possible to send it out at once and to tell the mother to report regularly at the dispensary where the feeding directions can be carried out under the supervision of the dispensary physician. In this way the child can be better fed and is saved the danger incident to a long residence in a hospital.

ABSTRACTS

A CASE OF HYSTERIA IN A BOY.

S. B., aged 10, was brought to me on December 4, 1900, complaining of pain in the back, which he had had for some little time. He was a strumous-looking, ill-nourished lad; an illegitimate child, very backward for his age, and extremely nervous. There was tenderness over the spinous processes of the lower dorsal vertebra, but no deformity or prominence of any of the spines or any stiffness of the muscles. The next day I was hurriedly summoned to him at 6 p.m., as "he was in a fit." When I arrived about half an hour later I found him huddled up in an armchair. He was quite conscious, complaining of pain across the back, giddiness and nausea. The pupils were equal and natural. From the mother's account the boy had had a fit while having his tea. He suddenly stopped eating, turned his eyes up to the ceiling, cried out that somebody was beckoning to him, and then he is said to have lost consciousness and to have remained in this state about an hour. There were no convulsions or involuntary passage of urine or feces. He had never had a fit before. I gave him a mixture containing bromides, but his condition gradually got worse. It was difficult to get him to take any food; he had no wish to do anything or go out, but lay huddled up complaining of pain in the back and head. The bowels were regular, and there was no trace of worms. He remained in this condition for some time. He was devotedly nursed and petted by his sympathetic and highly neurotic mother; there was a history of his having had a great shock through being shut up in a dark cellar for some hours by his grandmother before this illness came on.

One morning I found him in bed complaining of great pain in the abdomen. He was lying on his side with the knees drawn up and the thighs flexed on the abdomen. He had an anxious expression, and also complained of severe pain on the top of the head. The temperature was normal, as it had been all through; there was no sickness, the tongue was clean, bowels regular and pulse normal. When lying on his back the abdomen was distended and the slightest attempt at manipulation apparently caused the greatest pain, although I noticed that the pressure of the bedclothes caused none at all. On getting him to take a deep breath and on deep palpation there was obviously no real pain or tenderness. The abdomen was resonant all over. The apparent distention was found to be due to the patient lying with his spine very much arched, and upon his lying flat in bed the distension at once disappeared. I explained to the mother that I thought his symptoms were entirely due to nervousness, but she was quite sure that there must have been something else, so he was seen by Mr. Baker, of Waterloo Ville, in consultation, who entirely agreed with me as to the diagnosis. The patient was got up and out of doors as much as possible, and the mother was told in his presence that if he did not get better he would have to be sent away to a hospital. This was very much against his wishes, and the threat was successful, as he improved and lost all his pains and is now quite well.—E. Percy Court, *Brit. Med. Jour.*, Sept. 7, 1901.

TOXIC EFFECTS OF ACETANILID.

Francis T. Stewart (*Phila. Med. Jour.*, Sept. 7, 1901) remarks: Within the past two weeks I have seen two cases which prompt me to write concerning the danger of toxic effects from acetanilid when used as a dusting powder on abraded surfaces.

The first patient had sustained an extensive burn of the left lower extremity. I covered the raw surface with Thiersch's skin grafts, taken from the right leg and thigh, and asked an assistant to dress the right limb while I completed the left. Early the next morning the patient became cyanotic, collapsed and unconscious. On investigating the cause for such an alarming and unexpected episode I learned that the right leg had been copiously dusted with acetanilid.

The second patient was a baby, aged 4 months, suffering from intertrigo of the scrotum, buttocks and thighs. A neighboring physician advised a liberal application of the following powder: Calomel ʒss, bismuth subnitrate and acetanilid āā ʒii. The following day intense cyanosis developed. With the first case fresh in mind, the cause of the trouble was easily found.

Both cases reacted readily. I do not know of a fatality following the external use of this drug, but can conceive its possibility, especially if the patient be debilitated from age or disease.

In aseptic cases it has no place; in septic cases there are more efficient and less dangerous agents at our command.

PEDIATRICS

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VOL. XII. NOVEMBER 15th, 1901. No. 10.

EDITORIAL COMMENTS.

The Radical Cure of Hernia in Children

It is interesting to note the change of opinion of surgeons regarding the advisability of operating on hernia in children that has taken place within the past decade. Whereas a few years ago operation was only performed in selected cases they hesitate to operate now only in exceptional instances when proper mechanical means have failed to effect a cure. This change of practice is due to several causes, chief of which are the greatly lowered mortality of the operation and the vastly better results that have followed improved technique. Coley (*Annals of Surgery*, July, 1901) states that whereas ten years ago the mortality for non-strangulated hernia in four of the largest London hospitals was 6 per cent., the mortality is now less than ½ of 1 per cent. To this must be added the fact ten years ago 40 to 50 per cent. relapsed within two or three years. (The above statistics refer to adults and children together). He says that when he published his first paper upon the radical cure of hernia in children with a report of 50 cases, in 1893, the criticism was made by some surgeons that hernia in children should not be operated upon, inasmuch as it could always be cured by mechanical means. As a reply to this criticism he made an analysis of upwards of 15,000 cases of hernia in adults, observed at the Hospital for Ruptured and

Crippled in New York, with a view of ascertaining as nearly as possible how many gave a history of hernia in infancy and childhood. A careful study of these cases warranted the conclusion that at least one-third of all infants and children under fourteen with inguinal hernia are not cured by mechanical treatment, and hence the employment of operative methods in hernia occurring in children is entirely justified, provided these methods are free from risk. The only death he has had in upward of 500 hernia operations in children was due to double pneumonia following ether. Therefore it may safely be stated that the risk is not appreciable.

He rarely operates in reducible cases that can be kept in place by a truss when the patient is under four years of age. Between four and fourteen he advocates mechanical treatment for a year or two in simple cases; cases of adherent omentum and reducible hydrocele are incurable by mechanical means and call for operative procedures. Mr. Harold J. Stiles (PEDIATRICS, vol. xii, p. 320, November 1, 1901) says that, should there be any difficulty in keeping up the hernia it has been his practice to proceed to operation even although the child be only a few months old. An infant is more easily managed than a child who has just begun to run about. and the after-treatment of the wound is not more difficult in the former than in the latter; moreover, his experience is that infants stand the operation remarkably well. Of his first 100 cases, he finds that the operation was performed in 14 under six months; in 9 between the sixth and twelfth month; in 56 during the second and third year, and in 21 above the third year. T.

Proteids in Milk Mixtures

In an article with the above title, published in the *American Journal of the Medical Sciences*, October, 1901, Dr. Thompson S. Westcott shows the theoretical possibilities of the modification of milk with whey. This method of modification is by no means new, but only recently have attempts been made to accurately determine the composition of such mixtures. White and Ladd, of

Boston, published an able and lengthy paper on this subject early this year (*Philadelphia Medical Journal*, Feb. 2, 1901), but set forth no rules for the practical application of the useful knowledge therein contained. This Westcott does in a series of formulæ derived from Taylor's formulæ for the modification of milk by the introduction of the empirical ratio existing between caseinogen and lactalbumin in cow's milk, which, following the analysis of Van Slyke, he takes to be 4-1. Human milk contains 0.59 per cent. caseinogen with 1.23 per cent. lactalbumin, according to Koenig, quoted by Westcott, while cow's milk contains 2.48 per cent. caseinogen with only 0.66 per cent.l actalbumin (Van Slyke). So it is evident that sufficient dilution to bring down the percentage of caseinogen in cow's milk to anything like the quantity found in human milk dilutes the lactalbumin to a very low percentage indeed. This reduction of lactalbumin can be, in a measure, avoided by the use of whey as a diluent. The author follows White and Ladd's suggestion of making whey of fat-free milk so that the calculations are somewhat simplified. This whey made from fat-free milk is said to contain practically no fat and approximately 1.00 per cent. of lactalbumin and 4.8 per cent. sugar. "Hence it is evident that in any mixture containing whey the percentage of lactalbumin could not exceed 1.00 per cent. and could never quite reach this figure, since cream or milk added to the mixture to supply fat would have the effect of diluting the whey and thus diluting the lactalbumin percentage below 1.00. This could not be entirely made good by the added milk or cream, since the lactalbumin percentage of milk or cream is only one-fifth of its total proteids." The author adds a table calculated from the formulæ showing the maximum and minimum percent ages of caseinogen and lactalbumin obtainable with any definite fat percentage. The article also contains explicit directions for the preparation of the mixtures and examples of the practical application of the formulæ. It will well repay careful study. T.

ORIGINAL ARTICLES

A PECULIAR OUTBREAK OF DIPHTHERIA AND THE RESULTS OF ITS INVESTIGATION.*

By Marshall O. Leighton, S.B., Consulting Expert.

FROM the 16th to the 23d of March, 1901, there appeared in the town of Montclair, N. J., twenty-one cases of diphtheria. This municipality of 1400 inhabitants is a remarkably healthful one, and while twenty-one cases of that disease would be, from the metropolitan of view, insignificant, it was in this instance so wide a departure from the normal course of disease occurrence in Montclair that it assumed the characteristics of a serious epidemic before the end of the third day at which time ten cases had been reported.

It was observed as the cases were investigated that they were all in families of good circumstances, surrounded by favorable conditions and exercising every care in matters of health and well-being, as is customary in families of wealth and intelligence. There were therefore no apparent contributory causes in surrounding conditions. It was observed also that there were no patients younger than six years, while 50 per cent. of those affected were adults. Yet it was true that in nearly every case those persons in the family with delicate throats or those unusually receptive to disease were the ones who suffered. This then makes it appear as though the entire families might have been exposed to the same contagion.

There were no common social or religious interests among these families nor did the various children associate in school. Many attended different private schools, while in some families there were no school children. Food was supplied from many different markets and different localities and interests were involved. There was, however, one, and only one, common relation among them and that was the milk supply. In every case the family purchased milk from one dairy and in no case did these families purchase *milk* from any other.

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* Read before the Society of Alumni of the City Hospital, New York May, 1901.

Constant supervision of the milk supply in Montclair has enabled me to become perfectly familiar with the different milk routes and dairies from which the milk is derived and it was but natural that upon the report of the fourth or fifth case suspicion should be directed towards this dairy. Accordingly I visited the dairy plant, which is, by the way, one of the best in America, and took cultures from the throats of fifty of the dairy hands then present upon the place; all the throats appeared fairly normal except two, one of which presented a congested appearance, similar to that seen during an ordinary cold or mild attack of tonsillitis, while the other showed quite an extensive grayish color not sufficiently marked to be called an exudate, over both tonsils and the pharynx. Orders were given that these two men be separated from the remainder of the crew until a report of the bacteriological examination was received. On the following morning cultures showed the presence of what to all appearances was the bacillus diphtheriæ in the throats of these two men.

In view of the fact that an extraordinary number of cases of diphtheria had occurred upon this dairy route and that these men had what appeared to be the specific germ in their throats, there appeared to be no other course than that of closing the dairy, which was done by the owner March 20 and the milk was excluded from sale in Montclair on the same evening. Quarantine was established by the State Board of Health on March 21.

It is important to observe now the date of occurrence of these cases and their relation to the date of closing the dairy: On March 15th there was one case; March 16th two cases; 17th eight cases; 18th, four cases; 19th, none. Up to this time ten cases had been reported and on the evening of this day the first cultures were taken at the dairy; March 20th, two cases (on the following morning of this day was the last delivery of the milk from this dairy); March 22d, four cases; and these were the final cases of the outbreak. *The occurrence of the cases ceased while apparently in the full tide of the epidemic and two days after the dairy was closed.*

The men of the dairy crew were all put in quarantine—those with infected throats separate from the rest, and during three weeks cultures were taken almost daily from the entire crew.—Most of these were examined by Mr. D. H. Baldwin, bacteriologist of the Montclair Board of Health. One series of fifty-two were, however, examined at the State Laboratory of Hygiene at Princeton, while as many examinations were made by the author as his time would permit. During these three weeks the bacillus spread from the first two to seventeen others. Dr. Baldwin, of the State Laboratory, identified 10 positives out of his series of 52 cultures. In a few cases the bacillus persisted during almost the entire period while in others it was found only for a day or two at most. Some of the men were in and out of quarantine several times during the three weeks, showing a possible reinfection after being released, or what seems to me more likely an imperfect transference of the throat contents to the culture tube. During the entire period not one of the hands was sick nor did there appear any clinical symptoms beyond those already described in the first two cases.

In the meantime there occurred upon the route of this dairy in the city of Newark during the same interval as above described 16 cases; in East Orange, 10 cases; in Orange 2 cases; South Orange, 2; West Orange, 1; Verona, 1; Passaic, 2; while in Bloomfield, Paterson and Kearney there were none. There was also a case in New York City, the patient being stricken upon the day following that upon which he left Montclair, where he had been living in a family supplied with this milk. Again, in Caldwell, where the dairy is located and where no milk is delivered by this company a case occurred in the family of an Italian cheesemaker who bought all the skimmed milk from this dairy.

We now have a brief account of the outbreak with the discovery of a possible source in the dairy. The mode of entry of the disease among the milkmen is quite clear. It has been the practice of the Montclair Board of Health to require that milkmen shall not take away bottles from a quarantined house until after the case is discharged, when it shall be done in a special wagon or box and the bottles be submitted to boiling previous to being returned to the general stock. During the winter this is an expensive process because of the loss through breakage, and it has been the custom of this dairy to allow them to accumulate through the winter and upon the approach of warm weather to complete the sterilization. About one week previous to the appearance of the first case in Montclair two men from this dairy crew were sent down to a small shanty to boil the winter's stock of infected bottles. They completed the work in the course of a day and returned to the quarters and resumed their regular work of milking that evening. Now these men proved to be the ones who, at the first culture, showed the presence of the bacillus diphtheriæ. The course of infection from bottles to consumers is so apparent as to require no explanation. It appears that this misfortune arose just at the time that the dairy company was taking measures to prevent such an occurrence, and the only censure that can be directed towards it is that the men who had been handling infected bottles were allowed to return to the stables so soon after they had completed this work.

Many different opinions have been expressed concerning this milk being the cause of the outbreak of disease, and the Board of Health has been roundly denounced for its summary action in the matter. We have heard that it was all a coincidence, and eminent men have declared that because the men at the dairy were not ill nor showed any clinical symptoms of diphtheria the cultures observed must have been the *pseudo* bacillus and the disease could not have been communicated through the milk. In reply to this I have to state that a number of cultures from the throats of these dairy hands have been tested at the laboratory of the New York Board of Health and Dr. Park reports that six were found to be virulent. Morphologically, the bacilli taken from the cases occurring in Montclair and those taken from the dairy were identical.

We have heard that it is no unusual thing to find the germs of diphtheria in healthy throats and that we could not find a body of fifty men anywhere that were entirely free from them. We are familiar with examinations which have been made of healthy throats in city schools, yet I have no knowledge of any such series of cultures having been taken in suburban places or rural districts other than those which I shall soon describe. The presence of the Klebs-Loeffler bacilli may not be uncommon in persons living in the dusty environment of a city, but an extended observation of many hundred cultures taken in rural districts does not allow me to come to any such conclusion with reference to the country. Several years ago I had occasion to take upwards of sixty cultures from children in two schoolrooms out of which had been taken three cases of diphtheria, with the result that every one was negative even though there had been undoubted exposure.

Following along this line of investigation twenty-four cultures were taken from throats of dairy hands upon farms in the same neighborhood as the one above referred to, with the result that not a single positive culture was found. Again, fifty cultures were taken from the throats of children in the Montclair schools. These were examined in the laboratory of the New York Board of Health and were all negative. Forty-five cultures from the throats of inmates of the Children's Home in Montclair were taken and examined in the laboratory of the New York Board of Health. Dr. Park reports two slightly, but undoubtedly virulent; five morphologically identical with the former but not virulent, and four others resembling the diphtheria bacillus but not identical with it. In this home the inmates were from four to sixteen years of age and they are and have been freely fed upon the milk from the dairy in question. Yet they were all apparently healthy, just as the men upon the farm were.

Another objection to the idea that the milk was the medium through which this disease was spread is that there is so wide a difference in the number of cases in the different municipalities served by this dairy. In only three was the number of cases of diphtheria sufficient to attract attention. Why, we were asked, was not the route of this dairy as largely affected in Paterson or Bloomfield as in Montclair? It is, of course, impossible to answer satisfactorily such a question, yet if we examine into the matter a little and compute the ratio of families served to families stricken with the disease we shall find that the discrepancy is more apparent than real. In Montclair 4.89 per cent. of the families served were affected, in Newark 1.54 per cent.; in East Orange, 4.37 per cent.; in West Orange, 6.25 per cent.; in South Orange, 2.3 per cent.; in Orange, 2 per cent.; in Passaic, 2.53 per cent.; while in Verona there were 3.3 per cent. Such a comparison is, however, subject to criticism, for in municipalities in which the supply from this dairy is limited an extra case upon the route having nothing whatever to do with the milk supply would increase the percentage to an extent that would place the community in an entirely false position. Yet it is undoubtedly true that such a comparison can safely be sustained in Newark, East Orange and Montclair.

Another important consideration is the method of procedure of the large majority of Montclair physicians. There has been established there a more harmonious relation between the physicians and the local board of health than in any other municipality which I have ever observed, and the cooperative work between these two bodies is very gratifying. Consequently it has become the habit of the profession to make use of the facilities of culture diagnosis offered by the Board to a great extent, and cultures are taken in many cases of sore throat which prove to be diphtheria in mild form. Such cases under the usual condition would never be reported to the health authorities and so in Montclair the morbidity rate of diphtheria is largely increased. Such was the condition in this outbreak; many of the cases reported presented almost no clinical evidence and would not have been reported had the conditions common to other municipalities prevailed. This without doubt accounts in part at least for the higher incidence of the disease in Montclair than elsewhere.

Examining into a few of the individual cases: Two sisters 7 and 8 years of age—one lives largely upon milk while the other abhors it. The former was one of our patients during the epidemic. Again, two sisters were servants in houses on adjoining lots. They are inseparable companions; where one goes the other follows; both are exposed to the same dangers, and visit the same places together. One confesses to drinking milk habitually and likes the top of the bottle early in the morning, while the other never uses milk. Again, it is the milk drinker who had the disease. Finally, one of our patient's when taken ill with diphtheria had been for three weeks in childbed without visitors except those professional and subsisted almost entirely upon milk.

We are therefore led to believe that the extraordinary number of cases of diphtheria occurring in so short a time upon one dairy route, the cessation of their occurrence so soon after the quarantine of the dairy and the existence of virulent diphtheria germs in the throats of milkers forms a chain of circumstantial evidence which leaves no grave question as to the culpability of the milk. We are also led to believe that persons with bacillus diphtheriæ in their throats are dangerous to the community, however normal and healthy they may appear upon clinical examination. In this series of cases we have what is no doubt a bacillus with its virulence well-nigh lost. When we consider that they may have lived through a winter in those bottles awaiting sterilization in the shanty outside of this dairy it does not seem strange that they should have had no little deleterious effect upon those lusty Poles and Huns, the milkers at the farm, and that they should show themselves in so small a percentage of persons served with the milk.

SOME CLINICAL ASPECTS OF THE RECENT EPIDEMIC OF DIPHTHERIA IN ESSEX COUNTY, NEW JERSEY.*

By Richard Cole Newton, M.D.,
Montclair, N.J.

FROM whatever standpoint one may view the recent epidemic of diphtheria in our locality many interesting phases are apparent. The extreme importance of the subject fully justifies all the labor and time which have been spent in these investigations. The writer desires especially to thank Drs. Park and Williams of the New York City Board of Health for their kind interest, for several valuable suggestions and for much aid in the bacteriological and microscopical work. In short, without their help our conclusions would have lacked much of their weight and trustworthiness.

As the matter stands, you will see by Mr. Leighton's paper, just read in your hearing, that much ground has been covered, the probable cause of the spread of the disease determined and some very valuable suggestions for the management of dairies and the handling of the milk brought out.

My purpose this evening, however, is not to enlarge on this aspect of the subject but to record some of the more striking features of this epidemic, as observed at the bedside.

What excited my wonder most was the average age of the patients. Of the 22 cases in Montclair nearly all were adults, and a large percentage were females. The youngest patient was six years old while the average age was 18 3-10 years. Of the whole number 18 were females and 4 were males. A certain number were servants, but not an undue proportion. My own cases, four in number, were all young ladies of good social position between sixteen and twenty-six years of age.

No one has even hazarded a guess which can throw any light on the escape of the little children. The milk that is fed to babies is frequently sterilized or Pasteurized, but only in a certain percentage of cases, especially in cold weather, whereas the milk for children over two must be, as a rule, drunk without having been heated or otherwise changed. It has always been taken for granted, so far as my knowledge goes, that diphtheria is more prone to attack the young than the old, children rather than adults and babies rather than children. Why the reverse was true in our epidemic is, to my mind, inexplicable.

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* Read before the Society of Alumni of the City Hospital, New York, May, 1901.

The course of the epidemic seems to have been rather mild. But probably in few epidemics have so many cultures been taken in proportion to the number of cases as in this one so that the disease may have been and probably was of average severity. The 17 bacteriological cases at the dairy, already spoken of by Mr. Leighton, were of course remarkable, in that they practically showed no symptoms. It must be borne in mind, however, that antitoxin in early and sufficient doses was exhibited in all these cases at the dairy and in most of the cases in private practice as well. Dr. Williams, of the New York Health Board reports a remarkable persistence of the same type of bacilli in the dairymen's throats and also in the throats of some of the cases in private practice.

The bacilli from the throats of the children in the Children's Home, a half orphan asylum in Montclair, varied considerably in type among the virulent ones and there were a number of throats showing only the pseudodiphtheria bacilli. And here is another paradox. Why did none of these children present any clinical symptoms? Of 50 children and teachers in the high and grammar schools none presented a culture containing Klebs-Loeffler bacilli, but their throats looked much worse in many instances than did the throats of the children in the home. Probably the bacilli in the throats of the latter came from the milk from his dairy, upon which they largely subsisted; at any rate, the innocuousness of the germs corresponds with that of the germs in the throats of the dairymen.

And this fact lends color to the assumption that a number of attenuated germs found their way into this milk which did not possess sufficient virulence to excite symptoms in the throats of these young children, albeit they had obtained lodgment and were able to subsist there.

The history of the cases goes to show that diphtheria is not a highly contagious disease. In only two families in

Montclair was there more than one case. In one of these three cases developed; in the other, two. But all the cases appeared simultaneously, showing that they were from the same source and were not contracted from each other. That this was not entirely due to the isolation and quarantine of the cases is proved by the following instances: One mother with diphtheria nursed her two weeks' old infant throughout her sickness and the baby did not contract the disease nor even get sick. The mother's case was mild, but undoubtedly true diphtheria. She did not receive antitoxin.

Two other of the diphtheria patients were teachers in the public schools, and, so far as could be ascertained, none of their pupils contracted the disease.

I took cultures of three of the trained nurses' throats. These young women had been for weeks shut up with the disease, and there were no diphtheria germs in their throats. My own throat gave a negative culture.

In East Orange 10 cases of diphtheria occurred along this milk route. They were all single cases, and so far as could be learned, no subsequent cases developed from these.

In Montclair only one case was reported in which the Klebs-Loeffler bacilli were present in the throat without any symptoms whatever.

Of throats sufficiently affected to excite grave suspicion only 21 out of a total of 133 examined by Mr. Baldwin showed the presence of the true Klebs-Loeffler bacilli. In two mild cases which did not receive antitoxin the germ persisted for five and six weeks respectively; whereas in the case that presented no symptoms but which received antitoxin as soon as the bacteriological diagnosis was made, the throat culture was negative on the third or fourth day.

The small percentage of the drinkers of this milk that developed diphtheria (about 0.23 per cent. for the whole milk route in Essex County), unquestionably throws some doubt upon the assertion that the milk was the channel of the contagion.

However, there are several facts that must be borne in mind. The evidently feeble virulence of many of the germs has already been commented upon. Also the fact that in Montclair and its neighboring communities the hygienic surroundings are exceptionally good, and as Mr. Leighton has pointed out, our citizens are intelligent and careful, and as a rule, loyally support our efficient health board and I might say in passing that I think that Mr. Leighton's remarks in reference to the harmonious relations existing between the health board and the doctors are justified by the facts and I might add that the latter as well as the former are prone to exert themselves to the utmost to control an epidemic and terminate it as promptly as possible.

Another fact, which is perhaps the most important, is that the milk of this excellent dairy is cooled down to 40° F. within a few minutes after milking and is kept at that temperature until delivered to the consumers- This temperature is so low as to inhibit the growth of the diphtheria bacillus and its multiplication in the milk. Therefore if we assume the contagion was conveyed from one or two milkers whose throats contained a mildly virulent bacillus in a medium in which the bacillus could not multiply it is easy to see that not many cases would develop from this source.

The question of how the milk could become infected in a dairy in which so much care is taken, the men washing their hands and the cow's teats between each milking, is easily solved by the experiments of L. Napoleon Boston and others. Dr. Boston's experiments are related in a paper read before the Section on the Practice of Medicine of the American Medical Association at the last meeting of that body (*Jour. Am. Med. Assn.*, Sept. 14, 1901) and seem to prove the contention of Flagge and his followers, that the droplets of sputum from a consumptive's breath are highly contagious if not the chief method of the propagation of phthisis. That diphtheria may be spread in this way from person to person we know from well observed clinical facts.

I will not take up the time to go further into this aspect of the subject except to say that it does not seem to me that the human breath as a vehicle of direct contagion has received the attention from the profession generally which its importance demands. Aside from the danger caused by coughing and sneezing, and so blowing particles of moisture from the mouth into the milk; the milkers probably talk and laugh together while milking and this source of danger should, I believe, be carefully guarded against in future in the model dairy. A shield of gauze or wire could easily be interposed between the milker's mouth and the milk pail.

Of course we assume that the time-honored practice of spitting or milking on the hands of the milker to moisten the teats has become obsolete in fine dairies. Still the milker's hands might become reinfected after washing by touching his clothes or his handkerchief, wiping his nose or his face, or in a number of ways-

The mortality of the epidemic was small. Two deaths occurred among 49 reported cases, or about 4 per cent. This was largely due to the free use of the antitoxin in sufficient doses.

Of the individual cases one was sufficiently remarkable to deserve a somewhat extended notice. This was one of the fatal cases and was a boy of 13, who was said to have had a weak heart since an attack of typhoid fever in 1894. The onset of the disease was severe; the throat filled up with membrane within the first twenty-four hours; 2,000 units of antitoxin were promptly injected followed by a second injection of 2,000 units on the third day of the disease and 1500 more on the fourth day. On the fifth day the throat had entirely cleaned up and good hopes were entertained for the outcome. The pulse rate, however, had fallen to 30 per minute and remained at that figure for four days and in spite of every effort to stimulate the flagging heart, it finally recorded only 18 beats per minute.

Dr. Janeway saw the case in consultation. Just before death the pulse beats increased to 70 per minute and remained so for a short time. But the cardiac muscle lacked power and and the child died about ten days from the incidence of the disease.

Dr. Rally (*Archiv für Experimental Pathologie und Pharmakologie*, 42, 1899) explains the action of the diphtheria poison upon the heart as follows: "The fall in the blood pressure induced by the poison of diphtheria is due to paralysis of the vaso-motor center and also to paralysis of the heart, etc."

"This property possessed by the diphtheria poison gradually takes hold of the heart muscle and is seemingly stored up there until its complete action is manifest. This further explains the continuance of functional heart disturbances after many of the acute infections."

The only other clinical fact which seems worthy of record here was that in one of my own cases the quantity of the milk taken was quite small. The patient, a delicate girl of 16 years, arrived in Montclair on a visit on a Wednesday, and on the following morning she used some of the milk on her oatmeal. Saturday afternoon she had a chill and was quite ill; her pharynx and tonsils showing considerable membrane, and on Sunday the presence of the Klebs-Loeffler bacilli was demonstrated.

In future the proprietor of this dairy promises to have weekly bacteriological examinations made of the throats of all of his employees.

The health board has taken steps to prevent the return of any infected bottles or utensils to any dairy, and it is therefore to be hoped that no future infection can be alleged against this most excellent dairy.

CREOSOTAL IN WHOOPING COUGH.

Politzer (*Nouv. Rém.*, Nov. 24, 1900) advises the use of creosotal in whooping cough, and reports brilliant results from the employment of three drops of creosotal exhibited in a cup of milk three times a day.

The following formula for the preparation of a pleasant creosotal emulsion is also given in a contemporary:—

℞	Ol. amygd. dulc.	40	gram.
	Aq. destil	45	"
	Creosotal	20	"
	Pulv. acaciæ	20	"
M.	Adde ad lib.		
	Aquæ	15	"
	Spir. vini gall	50	"
	Sacch. albi	10	"

Journal of Ophtalmology and Otology.

THE BLOODLESS REDUCTION OF CONGENITAL HIP DISLOCATIONS.*

By Walter G. Stern, M.D.,
Cleveland, Ohio.

AS introductory to the value of the context of my paper, I would speak of a few points to which slight import has been placed when reviewing this subject. In the first place, in answer to many silent comments as to the importance and frequency of congenital hip dislocations, I would class myself with those who think it is a common deformity, both abroad and in America. Why does not the individual physician see more cases? Because people have been led to believe that the deformity is incurable and therefore do not come for treatment. In 1890 one writer could collect but 341 cases occurring in twenty-five years. Since 1890 four of the great European operators alone handled over 1300 hundred cases (Hoffa, 177; Schede, 350; Ghillini, 100; Lorenz—who counts each hip as one case, 730).

At the Thirteenth International Medical Congress, held in Paris last year, the consensus of opinion was that hip dislocations were even more frequent than club-foot.

The walk of these patients is a very peculiar one. We have been content with saying that they limp or have a waddling gait, quite unconcious that neither expression describes or characterizes it. We can find a limp in a multitude of conditions from irritation of the foot to a true ankylosis of the hip. We see a waddling gait in many cases of marked bow-legs, also in many pregnant women. Trendelenburg, who has analyzed the gait in these cases, finds that it differs radically from other types of limping in that it consists of a sinking down of the opposite side of the pelvis when the patient stands or walks upon the dislocated side. The alternate rise and fall of the respective sides of the pelvis cause the waddling in bilateral cases, but in unilateral often leads the careless observer to a false diagnosis of which hip is dislocated, for he thinks, of course, the one which stands higher must necessarily be the good one, while the truth is just the contrary. Trendelenburg has named this mode of walking "Adductionsgang."

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* Read before the Ohio State Medical Society, Cincinnati, May 8, '01.

The object of the treatment is in many eyes simply to get rid of the deformity and the limping. This is only partially true. If these patients could limp through life without pain it would not inconvenience them so very much and would make them more useful members of society. Halsted states that 51 per cent. of all cases suffer severely from pain. The pain comes on after the twelfth or fifteenth year and many are rendered unable to take even a five minutes' walk on this account.

The bloodless reduction of congenital dislocation of the hip-joint is, of course, the oldest method of treatment, but until the introduction of the modern aseptic technique made the bloody operation possible and thereby gave surgeons an opportunity to study the pathology and anatomy of the deformity, it was not successful because of the ignorance of the conditions and of the difficulties to be overcome.

Paci, of Pisa, brought out his "cura razionale" to be performed in four distinct tempos, but the method did not gain credence until Lorenz, of Vienna, used it simply to modify the open or bloody operation of Hoffa. Lorenz saw that after shaping the head to the acetabulum he could reduce the deformity without cutting any of the muscles by using Paci's method. Soon (after 150 operations) he concluded the preliminary opening of the joint to be no longer necessary and performed the entire operation in a bloodless manner. After several modifications and corrections, especially in improving the fixation, he was able to gain for his operation universal recognition and approval.

Not all cases are suited for the bloodless reduction, or, in fact, for any reduction at all. The age most suited is the fourth to the tenth year. Before the fourth year the difficulties are uncleanly habits, lack of control, disobedience in following out orders. Above the eighth to tenth years the head has too firm a position among the muscles to be brought down by any force we dare use to bring it to the level of the acetabulum. Each case is a law unto itself, and as our skill increases the age limits will be widened. The possibilities are shown by an operation by Professor Lorenz in June, 1900, where, at the sanatorium of Doctor Fürth, with the aid of several assistants, he reduced and fixed perfectly the hip of a strong, robust girl 18 years old. The shape and direction of the head are also important factors which, luckily, can be made out by palpation or by X ray. The head which is too large, or is extremely small, or is bent too far downward and forward on the neck of the femur gives a bad prognosis as to the stability of the reduction. The prognosis as to cure is good. Lorenz reports less than 10 per cent. of total failures: other writers, many of whom were former assistants of Lorenz, do not report such brilliant results, but taking into consideration the fact that many of Lorenz's cases are sent to him by these very operators after they have been reported as failures by them, his figures become the more remarkable as they are strictly true.

In brief the various steps of the operation are as follows: The thigh is strongly abducted and the adductor muscles are torn from their attachment by chopping or sawing with the edge of the hand. This must be complete as this group of muscles prevents the superabduction so necessary to keep the limb in place after it has once been reduced. After the muscles are torn through the limb is stretched to pull the head down to the level of the acetabulum. When this is reached, the thigh is flexed and extended vertically upwards at the same time making pressure behind upon the trochanter so as to force the head forward. Then, still keeping the hand or wedge beneath the trochanter to act as a fulcrum, the leg is abducted and the head slips over the posterior rim of the acetabulum with a distinct snap. The head is now in the acetabulum but has no tendency to stay there, and becomes redislocated as soon as one attempts to straighten the limb. To overcome this the hip is reduced and redislocated several times, the joint is rotated and pressed in so as to bore out the acetabulum. In cases of greater difficulty Lorenz attempts the reduction over the upper rim, which consists of making traction upon the thigh by means of a skein of yarn slung about the leg and pulled rhythmically by several assistants. The use of the screw for this purpose has been given up on account of the danger of fracture. The leg must be rotated inward to guide it to the acetabulum, while countertraction is made by means of a perineal band.

The physical signs accompanying a successful reduction are easily demonstrated and cannot be missed. The leg becomes as long as its normal companion; the hollow in Scarpa's triangle becomes filled up and the head can be palpated beneath the femoral muscles. The knee becomes flexed from shortening of the hamstring muscles. The snap, which is felt and heard at each reduction of the joint, can often be made out by observers several feet away. Upon redislocation all the above signs disappear.

The second step in the operation is to turn to use what has been gained in reducing the head. As I have already mentioned, the head slips into the acetabulum only after extreme abduction combined with flexion and internal rotation has been attained. Any lessening of this extreme position allows the thigh to become redislocated. Therefore, Lorenz fixes the limb by means of a plaster cast in this extreme position, and after the first few days of pain and restlessness pass away the flexed limb is fitted with a high shoe so as to enable the child to bear its weight upon it. In this manner the child is encouraged or rather forced to run about all day on this limb so as to allow of the functional burdening of the head and acetabulum. This pressure soon digs out a new joint which is easily demonstrable by means of the X-ray. Crutches are never to be used for they defeat this purpose. After six months the cast is removed, the leg brought nearer to the horizontal and a new cast applied; finally after 8 to 12 months the cast is taken off altogether and a high shoe is placed on the sound leg to preserve a small amount of abduction; this with massage, electricity and gymnastics complete the cure.

The question naturally arises, where does the head of the femur rest after reduction? In the vast majority of cases it fits into the rudimentary acetabulum and here bores out a firm hold for itself, very much in the same manner in which fractures tend to form false joints. In a smaller number of cases the head slips forward and comes to rest just beneath the anterior superior spine, where it has a firm bony support, permitting free motion with a minimum of limping, but the limp is no longer the slipping and sinking of the pelvis as in the "Adductionsgang" of Trendelenburg.

The results of the bloodless operation upon the appearance, walk and comfort of the patients are quite marked. The buttocks lose their flattened appearance, the hip is not so prominent, the limp has disappeared, the leg is longer and the ability to walk markedly increased. It is, indeed, often impossible to tell upon examination which hip has been dislocated. Professor Ewald demonstrated such a case to the class in clinic Albert. Several of Professor Lorenz's cases have been denied by other observers, because after a few years they found no traces of the deformity. Professor Frank showed a patient at the meeting of the Frankish Physicians at Nürnburg in 1900, where upon close examination they were unable to demonstrate anything wrong with the hip. Dr. Royal Whitman presented a case to the New York Academy of Medicine in 1898, where in his own words "The perfection of the cure was further assured by the fact that it was impossible to determine upon examination which hip had been operated upon." M. Monod presented a similar cure to the Society of Paris Surgeons, February 22, 1899.

Bilateral cases are treated just as satisfactorily. The limbs can be operated upon, both at one sitting, or after the first is cured. When both are operated on at once the spread-eagle appearance of the limbs renders locomotion more difficult, but with the aid of a cane the children hop about quite lively and soon learn to pick up objects from the floor.

There is but one danger connected with the bloodless reduction, namely, that of fracture of the neck of the femur. In older children, where the head is tightly held by powerful muscles, the danger is not a remote one. There is absolutely no danger from rupture of nerves or blood vessels.

The results depend largely upon the skill and perseverance of the operator and upon the faithfulness with which the after-treatment is carried out. One does not always succeed in reducing the dislocation at the first attempt, or in keeping it reduced; but one or more mishaps do not necessarily mean a failure as cases have been reduced after three or four attempts. Anatomically perfect results have been proven in about 50 per cent. of cases. Few have come to autopsy; among these is a case by Nore Josserand, where, after death, there was anatomically an ideal result. Hoffa, who was the father of the bloody operation, has adopted it in certain cases. Schede, of Bonn, who with Mikulicz advocated the use of machines, has given the latter up entirely; the American orthopedic surgeons have adopted it with some reserve, while in France it has converted all but Kirmisson. Ghillini reports over 100 bloodless operations with extremely satisfactory results, while Codivalla, reporting the cases at the Orthopedic

Institute at Bologna, has been successful even in subjects 17 years old.

The superiority of the bloodless reduction of Lorenz over the older bloody method lies in the fact that the dangers of sepsis, hemorrhage, shock, and, above all, the subsequent ankylosis which is such a frequent termination of the open operation are avoided. The consent for the bloodless operation can be more easily obtained, the results are equally if not more certain than in the opposing operation, while the motion, function and power of the joint are restored to almost their normal conditions.

FOR CHRONIC OTORRHEA.

According to the *Gazetta degli ospedale e delle cliniche* for May 21 1901, Verbitsky recommends:

℞	Potassium iodide	15 grains
	Tincture of iodine	150 minims
	Absolute alcohol,	of each 225 "
	Glycerin	
	Powdered iodoform	15 grains
M.		

A small quantity of this fluid is to be injected into the auditory canal and into the tympani cavity.—*New York Medical Journal.*

THE ALVARENGA PRIZE.

The College of Physicians of Philadelphia has awarded the Alvarenga prize this year to Dr. George W. Crile, of Cleveland, Ohio, for his essay entitled " An Experimental and Clinical Research into Certain Problems Relating to Surgical Operations."—*Brit. Med. Jour.*

COMPLICATIONS AND SEQUELAE OF TYPHOID FEVER.

By J. M. Krim, M.D.,
Louisville, Ky.

IN a paper with the above title read before the Louisville Clinical Society the author said: "I recognize that an essay on the subject of typhoid fever, its complications and sequelæ, should embrace all that is known of the disease, but the necessary limitations of a paper to be read before this society preclude such elaboration. And as there is no disease which has received more attention within the last six months, as the voluminous literature on the subject will affirm, I shall content myself by giving for your consideration a few cases coming under my personal observation.

Typhoid fever (uncomplicated), as you have certainly observed, has modified considerably in virulence within the last twenty years, so that the mortality, in this locality at least, is not now over 10 per cent. (barring the recent epidemic). This is presumably due to better hygiene, drainage and nursing, less feeding, not so much medication, and plenty of water externally and internally. However, the complications and sequelæ have not diminished in proportion to the improved conditions and this is responsible for the present mortality rate.

Typhoid fever respects no age, as will be seen by the following cases which came under my own observation:

Mrs. M. E., aged 35 years; married at 20 years; mother of four children, the oldest aged 14, the second aged 12. Both these children took to bed three days apart with fever which developed into typical typhoid. The mother (who was in the seventh month of uterogestation) and a nurse attended them until their convalescence five weeks from the beginning of the disease.

A few days later the mother complained of the general symptoms of typhoid fever, which was fully developed six days later. After two weeks of fever she gave birth to a fully developed male child weighing 8¾ pounds. (She claimed a week too soon).

After the child had been dressed, out of curiosity I took its temperature and to my surprise found it registered 102½° F. This was at ten o'clock in the morning; at six o'clock in the evening the temperature was 103½° F. The temperature ranged at about these figures for a period of seventeen days, when it came down to normal, and the child made a good recovery. It was bottle fed; the mother also recovered after six weeks of fever.

This was my youngest case of typhoid fever; my oldest was sixty-eight years, and the patient died with pneumonic complications.

As there is practically no part of the body which may not be involved in the complications and sequelæ of typhoid fever it would be impossible in this paper to even mention them all, therefore I have selected two cases which I hope will illustrate a few points of general interest.

Mr. F. K., aged 17 years, had a typical case of typhoid fever of seven weeks' duration, complicated with endocarditis which developed in the beginning of the fourth week. Ten days after the temperature had become normal he was awakened during the night with an intense pain in the scrotum. I saw him about an hour later and administered a hypodermic injection of morphine and atropine and ordered hot applications to the scrotum. The following morning he was comparatively easy but the scrotum was slightly larger than before. Hot applications were continued. In the evening of the same day the scrotum was considerably enlarged and pain more intense. Consultation was held and the consultant agreed that the treatment instituted was right and proper. The next morning the scrotum was greatly swollen and very tense, but there was not much pain. The scrotum was punctured at various places to relieve the tension, which had good effect, as by the following day the swelling was considerably less; but the whole scrotum had a very dark color and was insensitive to manipulation. The testicles themselves were very sensitive. The patient was feeling reasonably well and there were no symptoms other than those mentioned. By the following morning the scrotum had collapsed, emitting a gangrenous odor, the testicles being still sensitive to the touch. The use of antiseptics considerably modified the odor.

On the seventh day after the onset of pain there was sloughing of the entire scrotum, including a part of the integument of the pubes and root of penis, leaving the testicles with their envelope bare. By enveloping the testes in sterilized gauze and applying iodoformized oil to the sloughed parts, dressing it twice a day in the beginning and once a day later, he made an uninterrupted recovery in the course of a few months. At no time was there any difficulty in urinating.

E. W., aged 38 years, married, assisted her mother to nurse a younger sister confined to bed with typhoid fever. After four weeks' nursing she complained of general malaise, which developed into typhoid fever seven days later. In the third week pleuropneumonia developed, involving the pericardium. Consultation was held and diagnosis confirmed. The patient was very sick for seven weeks, when there was a slight improvement, the temperature gradually coming down to normal two weeks later.

Four days after convalescence became established she complained of an intense pain in the left leg from the knee down. Under hot applications and a hypodermic injection of morphine and atropine she rested fairly well that night. The following morning the limb was edematous and cold with no arterial circulation below the knee; the same evening there was some discoloration about the leg but very little pain. A surgeon was called in consultation, who thought amputation might save the patient's life. Consent to the operation was given, but the operation itself was deferred until the next morning. The patient, however, succumbed to heart failure during the night.

DISCUSSION.

Dr. W. F. Boggess.—The subject of the complications and sequelæ of typhoid fever is a most interesting and practical one. We all know from clinical experience along this line that the nature of typhoid fever has changed, even in my limited life as a practitioner—this much is unquestioned. Owing to our different methods of treatment and different methods of feeding we do not have the intestinal complications, we do not have the hemorrhages we formerly had under the old line of treatment, but we do see just as many complications of other kinds. The epidemic of typhoid fever we have just gone through has differed materially from any former epidemic, the disease spending its force, not in the intestines, but upon the heart-muscle as well as the nerve supply of the heart; the only deaths I have seen have occurred from heart failure with very little if any abdominal complications. It has been the experience of almost every physician with whom I have talked that they have lost more cases from cardiac asthenia this year than ever before.

In regard to the case Doctor Krim reported of typhoid fever of the infant in utero, cases have been reported where upon post mortem examinations after death of the infants typhoid conditions have been found. It was formerly considered that infants and young children were not susceptible to typhoid fever, but all the continued fevers we have had in children, those commonly known as infantile remittent fever, have been proven to be typhoid. Children bear typhoid fever wonderfully well and in the few cases that have died post-mortem typhoid conditions have been proven; and under modern bacteriological investigation most of those infantile fevers that get well in two weeks or less have been proven to be typhoid. We see typhoid fever in children much more commonly than we have heretofore thought.

Last year in my hospital and private practice I had some rather unusual complications of typhoid fever. I had any number of metastatic abscesses. Cultures were made from some of these at the City Hospital by a skilled bacteriologist and the bacillus of Eberth round. We had two cases at the hospital at one time with abscesses, one of the parotid and one of the inguinal glands; we had one with multiple abscess along the lymph channels. We opened several along the leg, and the patient afterward developed periostitis of the sacrum. We had a medical student last year who developed an infiltration of the lymph channels of the lower leg, and the condition looked to me like as if there was going to be a general cellulitis, if not gangrene, of a portion of the leg, but under treatment the patient recovered.

I saw only last week a rather unusual complication; a child in the second week of typhoid fever developed a meningitis and after what seemed to be a typical case of meningitis the child has made a complete recovery without any of the usual stigmata being left. In this connection I noticed recently in one of the medical journals that some physician reported three cases of meningitis in which cultures were made and the typhoid bacillus found. The typhoid bacillus is capable of producing as virulent a meningitis as the meningococcus or the pneumococcus. It is rather rare to find a meningeal complication of typhoid fever. That tubercular meningitis is oftentimes mistaken for typhoid fever we will admit. This was a typical case of typhoid fever and the child was practically convalescent when the meningitis appeared.

The case reported by Doctor Krim where the scrotum was involved is a rather unusual one. I have seen one case where the scrotum was enlarged—the patient had an orchitis, but did not have any suppuration.

Malignant endocarditis is not an uncommon complication of typhoid fever and I think sometimes that we may attribute endocardial murmurs in after life, where we are not able to elicit any rheumatic condition whatever, to typhoid fever in childhood. We overlook the fact that almost any infectious disease may be complicated by endocardial involvement.

Dr. P. F. Barbour.—We are interested in all the phases of typhoid fever when we come in contact with the disease in the young and in the aged. The case of typhoid fever in a new-born infant is most interesting. Apparently, from the report of the case, there is no other possible way for the child to have gotten the disease except the passage of the typhoid germ through the placental membranes. It would be interesting to know whether this child presented the ordinary typical symptoms of typhoid fever where it is associated with an intestinal lesion, whether it pursued exactly the same course, because it must have been a typhoid fever in which the typhoid bacilli were scattered throughout the system of the child. I have seen a great deal of typhoid fever in the young though I have never seen a case quite so young as that reported by Doctor Krim. I had a case of a mother who developed typhoid fever three or four days after the birth of her child but the child did not develop any of the symptoms. The symptoms of typhoid fever in the child run rather a different course as compared with the adult, and this is a fact that I do not think any of us can quite well explain. Typhoid fever in the child misses the second week, the ulcerative week. We have the stage of inflammation of Peyer's patches, then the stage of resolution instead of inflammation, ulceration and resolution, as in the adult. The explanation may be that the child is able to combat the typhoid bacillus and in this way gets through the disease more rapidly than the adult. It may be on the same principle that the child has pneumonia, meningitis etc., for a less time than does the adult. Typhoid fever in the child is accompanied by just such temperature, nosebleed, headache and such other symptoms as we see in the adult.

One of the sequelæ that has especially interested me has been the after development of cerebral symptoms. I remember one case, a child 6 years old, who showed quite a marked aphasia during his recovery from typhoid fever. We have quite often noticed in the child a tendency toward cerebral troubles, either a mild form of aphasia or even the more severe symptom of mental derangement. In those about the age of puberty we were apt to encounter pubescent dementia.

Dr. F. W. Samuel.—In reporting the case I did not understand Doctor Krim to say that the testicles were enlarged, but that they were merely tender. The young man probably had a condition due to a septic embolus. The complication referred to is one that I have never seen in typhoid fever. I regard it as an exceptional experience. It does seem that he has had a most remarkable result in that he has enough granulation tissue to cover the testicles. I wish Doctor Krim in his closing remarks would tell us more about the case.

Dr. J. M. Krim, referring to the remarks of Doctor Samuel: Posteriorly there was about 1 inch of the scrotum left. The testicles were supported by sterilized gauze saturated with iodoformized oil. Healthy granulations sprang up and the testicles themselves were not involved in the suppurative process.

In regard to the treatment of typhoid fever, I purposely refrained from saying anything about it. I do not believe there is any treatment except it be symptomatic. As far as aborting the disease is concerned, I have tried everything mentioned in current journals and text-books with the same result. I had three cases of typhoid fever at one time in one family, and used three different methods of treatment at the same time in the three cases. It is necessary that the heart be supported, and digitalis is not always indicated. After three weeks, when the patient has begun to convalesce, when the heart still beats 110 to 120 to the minute, it is advisable to give strychnine, and if the heart beats irregularly and is not as quick as it should be it is advisable to give digitalis in combination with the strychnine. Of course in the treatment of typhoid fever the bowels should be kept in an antiseptic condition, and where there is much tympanites, with difficulty in the passage of gas etc., in my experience there is nothing better than the well known turpentine mixture with salol. This acts as a styptic as well as an antiseptic.

PASTEUR.

In a life of Pasteur, published in Paris, attention is called to the fact that the man who was destined to revolutionize chemistry came in fourteenth in the list of twenty-two candidates at his high school in Dijon, and was marked "weak" in chemistry. His researches in regard to the disease of silkworms are said to have been the means of saving France a sum equal to that paid to Germany as a price of peace. He made no attempt to obtain a legitimate profit from the commercial application of his labors.—*American Medicine.*

THE OPEN-AIR TREATMENT OF PHTHISIS AT CARDIFF.

In accordance with resolutions passed recently, a tent for consumptive patients was opened in the Cardiff Union grounds on August 19th. Five patients were lodged in the tent subsequently under the care of Dr. Jenkins, medical officer of the workhouse, and everything was provided to make them comfortable.—*Brit. Med. Jour.*

THE ENDOWMENT OF RESEARCH IN AMERICA.

A donation of £10,000 has been made to the Medical Department of the University of Buffalo, for the purpose of erecting a laboratory to be devoted entirely to research work. It will be known as the Gratwick Research Laboratory.—*British Medical Journal.*

CORRESPONDENCE

ACETANILID POISONING.—A CASE.

To the Editor of PEDIATRICS:

Dr. S. E. Earp, of Indianapolis, reported in your number for August 1st a case of what was doubtless acetanilid poisoning, resembling morbus cæruleus. It brought to mind a case treated by me several years ago and never published. The baby, a few days old, developed a rawness of the buttocks. Acetanilid and stearate of zinc were dusted on it several times in twenty-four hours. Then the child became blue, as if it were becoming asphyxiated. I found no cause for this after a careful examination, except the powder. This was taken off and in forty-eight or sixty hours the blueness had disappeared, never to return. For a time the parents believed they had a blue baby and were somewhat disconsolate until I assured them that I knew no reason why the baby should not be spared to them.

In cases of acetanilid poisoning the appearance of things seems far more desperate than the reality. I have read at least one account of a case where heroic measures were taken to save the patient from impending death by suffocation. Personally I think there is little danger. I believe acetanilid produces what may be termed a pseudo-asphyxiation, an apparent asphyxiation vastly different from the genuine and to be distinguished from it by the strength of the heart-beat. It seems to be due to some chemical change in the arterial blood, making it blue, the change not being due to carbon dioxide nor to a dangerous want of oxygen.

Respectfully,

EDWARD A. TRACY, M.D.

Boston, Mass, August 5, 1901.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, April 18, 1901.

Robert F. Weir, M.D., President.

Dull and Deficient Children.—The evening was devoted to a symposium on this subject, arranged by the Section on Pediatrics.

Introduction to the Psychological Study of Deficient Children.—Dr. Wm. B. Noyes read this paper. He said that "suggestion" was one element in psychology, and that an attempt had been made recently to adapt suggestion to education. According to this plan children are divided into the following classes, viz.: (1) children who are more or less of an automatic type—the average good children; (2) sensitive children, who respond to suggestion most when their emotions are appealed to; (3) those children whose minds are active and bright and who have a well defined personality and on whom it is difficult to operate except by arousing a spirit of opposition; (4) a class of children who are obstinate and rebellious to any suggestion, including all undisciplined and insubordinate children and a large class of morally perverse and degenerate children, and, possibly, a fifth class, in which suggestibility is abnormally marked, as in those of a hysterical temperament. In our studies of mentally defective children we should distinguish (1) those in which the faculty of perception is defective, e.g., the deaf, dumb and blind; (2) those children who in spite of possessing all the special senses lack the power of attention; (3) those children showing a defect or disease of the will; (4) those showing deficient reasoning power, and (5) those who are morally defective. It was unfortunately true that many of these defective children are "born tired," so that it was hard to get any amount of work done by them. Attention is essentially a motor function and when failure of attention is serious one usually finds other motor disorders. In feeble-minded children less seriously affected the lack of attention is only occasionally observed. The will may be impaired up to the point of almost complete extinction. Sometimes the will is impaired by some silly fear or idea, or by some sudden impulse, as commonly observed in epileptics, The will may also be impaired by a lack of attention. The loss of will power is one of the most common manifestations of hysteria.

Etiology of Mental Deficiency.—Dr. Pearce Bailey read this paper. He said that idiocy, imbecility and feeble-mindedness were different forms of the same condition. The mentally deficient might be conveniently divided into those occurring before birth, those occurring at birth and those developing in early infancy. Feeble-minded women are extremely liable to fall a prey to the lust of men, and their progeny are idiotic. Such women are also particularly prone to venereal infection, hence the wisdom of establishing state custodial institutions for such women. The disastrous effects of alcohol on the developing ovum had been demonstrated experimentally. In his experience the children of drunkards are apt to have very excitable nervous systems, but idiocy is not especially common. Active syphilis in one or both parents is reflected in the offspring, and is a fertile cause of miscarriage. At the present day society places but few obstacles in the way of marriage of persons who are both physically and mentally unfit for that social state. He thought the time must come when chronic alcoholics would be placed under State control. During the first two or three weeks of life it was impossible to decide as to the mentality of the infant. Severe nervous storms result in infants from slight irritations. At the end of the second year of life the brain weighs three times what it did at birth, hence, if any deficiencies are to be discovered and made good, no time must be lost. There was no doubt whatever that convulsions in children may be the result of a variety of reflex irritations, such as worms, phimosis and intestinal irritation. If convulsions occur with sufficient frequency the epileptic habit might be formed and the fits take place although the cause is not discovered. In certain cases where the family record is clean and yet epilepsy exists he believed this was its origin.

Dullness Due to Eye Defects.—Dr. Charles Stedman Bull read this paper. He said that a very common cause of apparent mental dullness in young children is defective vision. Almost all infants were born with hypermetropia. These children complain of a difficulty in sustaining the accommodative effort for near vision for any length of time. They often become in consequence slow and stupid. When the error of refraction had been recognized and properly corrected it was surprising to see how soon the mental dullness disappears. Astigmatism was another defect which was often responsible for apparent mental dullness. In these children there was often an annoying diplopia of visual images. In the neurotic child such a strain had a most disastrous influence. By far the most important refractive error was myopia, the curse of modern civilization and one rapidly on the increase; the number of short-sighted pupils increases from the lowest to the highest grades in the schools, and is in direct proportion to the number of hours the eyes are employed in study. The mental evolution of such a child was instructive. He becomes introspective and perhaps perverted in his tastes. If the refractive error and the habits of life were both corrected a new world was opened up to him and no more doubts were cast upon his mental condition. Most of the muscular defects of the eyes are connected with some variety of refractive error. Insufficiencies of the ocular muscles were associated with headache and eyeache, with vertigo, diplopia and more or less mental confusion. Among the congenital anomalies of the eyes causing more or less defective vision were: (1) Congenital cataract; (2) dislocation of the crystalline lens; (3) more or less marked absence of pigment in the uveal tract, notably the iris; (4) coloboma or fissure of the iris or choroid, or both—an arrest of development; (5) entire absence of the iris, a very rare anomaly which is almost always accompanied by marked impairment of vision. There were also cases of congenital word blindness, a congenital lack of visual memory. Methodical and persistent instruction in reading quite early in infancy would give such children the best chance for improvement.

Function of Teacher in Discovering and Treating Mental Deficiency.—Prof. LIGHTNER WITMER, of the University of Pennsylvania, read this paper. He distinguishes between dull and deficient children, on the one hand, and defective or feeble-minded children on the other. He was of the opinion that the teacher is more favorably situated than the physician for detecting mental deficiency in children. He said that he had never found a case of chronic bad spelling without finding also some defect of vision. He estimated that fully one-tenth of the time and effort of teachers is spent in trying to teach the mentally backward. He advised the segregation of children into two distinct classes—one for intellectual, and one for moral defectives, with specially trained teachers for these classes. One must rely upon the teacher chiefly to discover the defects and upon the teacher and physician for the amelioration of these defects.

The City's Obligation to Provide Special Education for Defective Children.—Supt. C. E. MELENEY, of the Board of Education, discussed this subject. He said that the census of 1890 stated that there were 97,000 feeble-minded or idiotic persons in the United States, but the real number was probably considerably greater. There are 19 state institutions for the feeble-minded, two in this state. A sufficient justification for the adequate provision of special instruction for such children was to be found in the marvelous results obtained by the patient and scientific work done in these institutions. Statistics were being collected to determine the number of such children in the public schools of New York City, and already it is evident that there are enough to form several special classes The speaker said that, in his experience, the greatest obstacle to this work had been the unwillingness of parents to admit that their children are backward or mentally deficient. If defective children could be quietly separated from the other children and placed in special classes in large schools without directing attention to them, and then be allowed to live home like the others, something might be accomplished for the good of this unfortunate class. If defective children were to be excluded from the common schools for their own sake and for the sake of other children, the question would arise as to what should be done for them. Appropriate special schools or classes must be established as a part of the public school system. Born teachers, with added special training, were needed for such work. Most of the New York City children of this class were in asylums or in the public schools, or perhaps upon the streets. Small schools or special classes were better than large institutions. Children should be kept as far as possible in a natural environment and should be accustomed early to that environment in which they must spend most of their lives. One great error in the education of defectives was the neglect to discover the mental defects in the early years of life. Parents often keep such children at home until forced to send them to school under the compulsory education law. The defective child looses much in these early years. In the city of Providence there are five schools, part of the school system, for the education by specialists of mentally deficient children.

Dr. LEROY M. YALE said that he had made it a rule to assume that there was some physical defect in any child brought to him with the statement that it is backward at school, and until such defects had been carefully excluded by careful study, with the aid of specialists, he would not think of blaming the schools. In watching certain families for many years he had often been struck with certain modes of development characteristic of those families. For example, the parents may have been quite slow and dull in childhood, though clever enough in later life, and their children are apt to present the same mode of development. There was a tendency in this city to spend money for the higher rather than for lower education, and he felt very strongly that if there was not enough money for all, then by all means let it be cut off at the top and put on at the bottom; in other words, at all hazards let mentally deficient children receive the best possible education.

Mr. Maximilian Groszman said that the physician and the expert educator had very little opportunity of observing the early stages of mental development; possibly something might be done to remedy this by having a competent school physician. He would emphasize the importance of removing many of these children from their home environment. This applied not only to the tenement-house environment but also to those subjected to the hot-house culture and over-stimulation found so commonly in the homes of the well-to-do. The more the physician becomes the regularly established adjunct and assistant of the teacher in the work of the school and the constant adviser of the parent the better would it be for the class of unfortunates under discussion. In his experience many children had been denounced as dull or backward who were not backward at all. About 20 per cent. of the children in the schools had been found to be suffering from defects of the eyes and ears and on remedying these defects many children become bright and normal. Many children are normal but are simply slow and cannot keep the pace with the pushing methods found in our schools. In this connection he would emphasize what Dr. Yale had said about children reproducing the childhood stage of their parents. It should be remembered also that our schools are becoming more and more inclined to take cognizance of the so-called bright children or those children who develop successfully under the ordinary methods calculated to strengthen the power of memory. Such brightness might be nothing more than a quick reaction time. The apparently dull ones, the slow ones, were often those having the greater mental strength and endurance and would develop into those who would be the pillars of society and the more intellectual and successful men and women. The bright ones are like hot-house plants and often never reach real maturity. Those whom everyone could recognize as defective were not the most unfortunate; the most unfortunate were those having minor defects. He would enter a special plea for those having the minor mental abnormalities.

Dr. T. Alexander MacNicholl said that heredity prepared the soil and planted the tendency; environment might modify these. He had conducted an investigation to determine the relation of heredity to mental deficiency. Of 10,000 children 8.8 per cent. showed more or less marked deficiency. The dullness in 40 was reported to be due to environment. There were 221 classified as due to heredity, and 471 others were children of drunken parents. He had been able to trace 463 children in 150 different families through three generations. Of this number 17 were precocious in some one thing; 403 were generally deficient; 17 had neurotic fathers; 78 neurotic mothers; 313 had drunken fathers and 51 drunken mothers; 43 had neurotic grandparents; 265 had drinking grandparents:

246 drinking parents and grandparents. Two per cent. of these had children of less than average intelligence. A study of 51 strictly temperate families with 231 children showed less than 3 per cent. dull, and very few suffered from any neuropathy.

Dr. HERMAN KNAPP said that when there was an anotomical defect education would avail nothing, but where there were defects of environment or of the sensual organs the development could be made normal by correcting these defects. The visual organs were certainly the main avenues of thought. Nearsighted children were not, as a rule, stupid, and the child that was born blind was not stupid but it had no visual memory. There was an optic memorizing center and an acoustic memorizing center; they were not identical. At one time he had operated upon a boy of 14 years who had been born blind. A cataract was removed and the sight perfectly restored, but at first the boy had been unable to speak the names of common objects. However, if they were handed to him so that he could feel them he was at once able to give the correct names. Although he had been blind all these years and had had but little education, he had learned very quickly after the restoration of his sight and at no time had he been stupid or mentally deficient.

Dr. L. A. Coffin said that the obligation of the State was to provide teachers who had had a careful training at college, so that defective children might not merely be given an education but the best possible education.

Mr. GODWIN, Superintendent of the Department of Education, objected to the plan of having ungraded classes, as they were called, for defectives, because, he said, the teachers would force out of the regular classes and into these special classes all pupils who were not desirable whether they were defective or not.

TEST OF LEUKEMIC BLOOD.

Sabrazes states that a drop of blood from a normal subject mixed with 20 drops of pure or distilled water produces a clear, reddish fluid as the red corpuscles are instantly dissolved. But if the blood is from a patient with myelogenic leukemia the fluid remains turbid and opalescent. The white corpuscles are not destroyed by the water and remain in suspension, rendering it less limpid than the solution of normal blood. The same phenomenon would probably occur in case of much leucocytosis from any cause.—*Jour. A.M.A.*

BOOK REVIEW

Practical First Principles.—Simplifying the study of normal and abnormal structure and function. Designed for the use of students and practitioners of medicine. By A. H. P, Leuf, M.D., Philadelphia. Published by the Medical Council, Twelfth and Walnut Sts., 8vo, 105 pp., nearly 50 illustrations.

This little volume is well meant and may be of some value to young and unusually dull medical students. The illustrations are occasionally rather absurd. The whole impression the book makes is that the author has tried to prepare a dose of "medicine for babes," and a well diluted homeopathic dose at that. It is to be regretted that the spelling and accentuation of the Greek etymologies should be so careless.

WOMAN DOCTORS OF GERMANY.

It is reported that two women have passed their state examination and hence are regular practising physicians of Germany. These are the first women to receive this honor, hence the event is of some interest. These two Berlin women, graduates of Halle University, have fulfilled all the legal requirements for a physician, and have studied the entire course in Germany. German women who have studied medicine have previously ranked as "heilkünstler," not as regular physicians. —*Albany Med. Annals.*

ABSTRACTS

THE "ANTISPITTING CRUSADE."

Charles A. Wilson writes to *American Medicine* as follows: In your issue of May 25th I noticed an editorial comment entitled, "Extremism in the Anti-Spitting Crusade," which criticises the ordinance against spitting on the sidewalks, recently passed in New Orleans. Permit me to say that San Antonio has had an ordinance in force for about a year which prohibits spitting upon the floors of public buildings, street-cars and sidewalks, under penalty of arrest and fine of $5 for each offence. Under its action San Antonio has made a wonderful improvement in the matter of cleanliness of her street-cars and sidewalks. Some arrests have been made and fines imposed, and it is a matter of pride to San Antonio people that to-day it is a rare occurrence to see anyone expectorating upon the sidewalks, and it is frequently noted that persons wishing to expectorate step to the edge of the sidewalk and expectorate into the street. So far as I can find out there has been very little difficulty in enforcing the law. It seems to me that any measure which brings with it such marked benefits should be encouraged, and our northern cities should not be the ones to discourage such sanitary methods which bring good to all, and which can be so easily enforced.

CONGENITAL STENOSIS OF THE LARYNX.

Geo. T. Ross (*Montreal Med. Jour.*) reports the following case: A. B., aged 3 years, child of Hebrew parents, living in the Maritime Provinces, in good circumstances, was brought for difficulty of phonation. The child had never cried since she was born. When irritated or forbidden to have her own way, instead of showing her resentment by loud crying, she would give vent to a muffied sound as if a gag were held over her mouth. No other sound was ever uttered by the child. Deglutition was perfect and the nourishment of the body was natural. The growth and health of the patient from infancy being normal, the parents did not seek other advice than that of the local practitioner until she reached the age of 3 years. Special enquiries regarding syphilitic heredity or other dyscrasia occurring in the family connections near or remote failed to elicit any testimony sufficient to establish the origin of the malformation. No family history of similar growths could be obtained.

An examination showed mucous membrane of the larynx apparently healthy throughout. A web or band was seen stretching across the glottis, which bound the vocal cords together. The color of this band was lighter than the surrounding mucous membrane generally. Inspiration and expiration were conducted through an oval opening in the web, large enough to admit of the aeration of the blood when the child was not excited, but any excitement at once produced a cyanotic state.

The term stenosis is rather ambiguous, since nearly every deviation from the normal in this region is apt to obstruct the caliber of the laryngeal tube to a greater or lesser degree, but congenital stenosis is not an ordinary state.

Arrested development of the larynx is sometimes found along with imperfection of the genital tract; and the respiratory apparatus being formed from the same source as the larynx, it is rare to find that organ mal-developed without some want of complete formation in the lungs, trachea or bronchi. In this case no trace could be found of any divergence from the normal; indeed, the entire bodily development was otherwise perfect.

The case having been explained to the parents and the necessity for operative treatment set forth, very strong objection was made to any measures of an operative character, and the child was taken home until the parents could decide the matter.

STATEMENT OF RESULTS IN USING DIPHTHERIA ANTITOXIN AT THE BETHESDA FOUNDLINGS' HOME, ST. LOUIS, MO.

REPORT OF MEDICAL STAFF TO DR. E. W. SANDERS, PHYSICIAN-IN-CHARGE.

Herewith is submitted a summary of the cases of diphtheria in the Bethesda Home showing the results of the use of antitoxin.

The amount of antitoxin administered was from 2000 to 4000 units, depending upon the age and size of the patient and also upon the severity of the throat involvement. The antitoxin was invariably given as soon after the diagnosis was made as was possible and the injections in every case were into the abdominal wall. In only a very few cases was it necessary to use a second injection.

RESULTS AND OBSERVATIONS.

The duration of the fever was from two to five days, with the exception of cases No. 2, 8 and 20, and in those cases in which the antitoxin was administered on the first day of the disease there was a fall in the temperature of from 1 to 5 degrees within the first twenty-four hours. Those cases not receiving the serum until the third day ran a more protracted course.

In almost every case the membrane (pseudo) disappeared within three days and in one case it had completely disappeared on the second day.

Case No. 8 was a severe laryngeal one in which it was necessary to use the tube. This child finally died at the end of the fifth week, intubation and tracheotomy both having been performed. Post-mortem examination of this case revealed a post-pharyngeal abscess which had not been suspected during life, no symptoms or signs being observed which would suggest this condition. It is likely that such conditions exist more frequently than is supposed, and careful examination should always be made for such complications in severe and protracted angina.

In case No. 26 death occurred several days after the apparent recovery of the child. It was due to post-diphtheritic paralysis and followed a violent effort on the part of the child to get from under another child who was falling on top of him. Death in this case was very sudden.

In case No. 7 there was a severe laryngeal involvement and on two occasions the temperatnre reached 107° F. in the rectum. This child, however, recovered.

Case No. 20 had erysipelas simultaneously with the diphtheria. Diphtheria antitoxin was administered in the morning and in the evening of the same day an injection of antistreptococcic serum was given. The angina promptly subsided, but the erysipelas, despite other injections of antistreptococcic serum and vigorous local treatment, became universal, and the baby died some two weeks after the onset.

Case No. 2 developed pneumonia on the second day and died from this disease on the twelfth day.

Particular attention is called to the suddenness of the stenosis in the laryngeal cases.

On January 31, February 19 and March 27 immunizing doses of antitoxin were administered to all of the babies in the institution. Cases developed after the first effort at immunization (cases 2 to 6 inclusive) making it necessary to immunize the children again. On February 10 larger amounts of the serum were used (750 to 1000 units). In spite of this, cases 7 to 21 inclusive, occurred and it was again necessary to immunize the children on March 27. A less concentrated serum was used on this occasion. After this date not a single case of diphtheria occurred in the nurseries.

The questions naturally arise: Does antitoxin immunize? Was this particular serum effective in the doses administered? Was the epidemic of a particularly vigorous nature?

The serum used in the treatment of these cases (Millikens) had a pronounced curative effect, and judging from those cases not handled expeditiously the epidemic was of an unusually severe nature. Those cases developing soon after the serum was given in immunizing doses were very mild, usually abortive.

The first attempt to immunize was not successful, inasmuch as too small quantities of the serum were used (250 units). This amount of antitoxin was not sufficient to immunize in the presence of so vigorous an infection and with the surrounding conditions as favorable as they are in a foundling asylum.

We feel that a study of these cases of diphtheria justifies the conclusion that diphtheria antitoxin is curative and that in proper doses it is prophylactic; especially is this true of the less concentrated serum.

There have been 100 babies in the home and they have all been exposed to diphtheria but they escaped infection. Not only babies but the nurses and the women about the institution as well were attacked in this, the most severe infection we have had in the institution in years.

Cases of Diphtheria Treated with Antitoxin in the Bethesda Home, St. Louis, Mo.

Number.	Name of Patient.	Date of Diagnosis.	Location of Membrane.	Day Antitoxin Administered	Amount.	Day Membr'ne Disappeared.	Intubation.	Result.	Remarks.
1	Elmer	Jan. 26, '01	Pharynx	Late	3000	5th day	No	Recovery	—
2	Samuel	Feb. 8, '01	Larynx	1st day	3000	3rd day	Yes for 3 days	Death	Died of bronchopneumonia.
3	Paul	Feb. 18, '01	Both tonsils	"	2500	3rd day	No	Recovery	—
4	Schmidt	Feb. 19, '01	Pharynx	?	3000	4th day	"	"	Entered hospital with diphtheria.
5	Sam	Feb. 19, '01	"	?	3000	3rd "	"	"	Entered hospital with diphtheria.
6	Lillie	Feb. 19, '01	Right tonsil.	?	3000	3rd "	"	"	Entered hospital with diphtheria.
7	Mary M.	Feb. 20, '01	Larynx	1st day	4000	3rd "	Yes	"	—
8	Love;	Feb. 20, '01	"	?	?	?	Yes, and tracheotomy.	Death	Entered home with diphtheria.
9	Marie	Feb. 22, '01	Pharynx, ear	2d day	4000	?	No	Recovery slow.	Post-pharyngeal abscess
10	May	March 5, '01.	Both tonsils.	1st day	3000	3rd day	"	Recovery	—
11	Shelby	March 7, '01.	Pharynx	1st or 2nd day.	3000	3d or 4th day	"	"	—
12	Maurice	March 9, '01.	"	1st day	3000	3rd "	"	"	—
13	Clyde	March 12, '01.	"	"	2500	3rd day	"	"	—
14	Willie S.	March 16, '91.	"	"	2000	3rd "	"	"	—
15	Edward	March 17, '01.	"	"	3000	3rd "	"	"	—
16	Aura	March 18, '01	"	"	2500	3rd "	"	"	—
17	Henry	March 19, '01.	"	"	2500	2nd "	"	"	—
18	Mike	March 23, '01.	"	"	2500	3rd "	"	"	—
19	Walter	March 23, '01.	"	"	2500	3rd "	"	"	—
20	Norma	March 26, '01.	"	"	2500.	3rd "	"	Death	Erysipelas first day cause of death.
21	Myrtie	March 30, '01.	"	"	2500	1st "	"	Recovery	—
22	Sarah (adult).	April 4, '01	"	"	3500	?	"	"	—
23	Louise (adult)	April 22, '01	"	"	4000	3rd "	"	"	—
24	Miss R (adult)	April 15, '01	"	"	4000	3rd "	"	"	—
25	Miss H. (adult)	April 11, '01	"	"	4000	3rd "	"	"	—
26	John S	Jan. 29, '01	"	4th day	2500	?	"	"	—

PEDIATRICS

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VOL. XII. DECEMBER 1st, 1901. NO. 11

EDITORIAL COMMENTS

Tetanus from Diphtheria Antitoxin

The awful calamity of twenty cases of tetanus with ten or twelve deaths following the injection of curative and immunizing doses of diphtheria-antitoxin in St. Louis, has profoundly stirred both the laity and the profession, and, sad to relate, has done much to lessen the confidence of many as to the harmlessness of this great specific.—In this instance the diphtheria-antitoxin was made by the St. Louis Board of Health under the direction of the bacteriologist of the department. It seems that the horse "Jim," from which this serum was drawn, was bled on August 24th. This lot was sent out from the laboratory on September 10th. The same horse was bled again on September 30th, but, as the animal showed symptoms of tetanus a day or two later, this serum was destroyed without having been tested. The first death from the use of the serum of August 24 occurred on October 28.—Several possibilities as to its mode of infection have been suggested. Either it may have become infected in the stable, or the horse may have been suffering from tetanus, although he gave no evidence of it. This latter view would seem to be at variance with our present ideas as to the period elapsing between infection and development of symptoms of lockjaw, as it was more than a month before such symptoms occurred in this instance. But when we remember that an animal that shows symptoms of tetanus "has not just begun to have this disesae but has begun to die of it," the possibility of the disease having already existed for some time does not seem incomprehensible. The first explanation, however, seems, on the whole, to be the more likely one. It appears that the horse used for the production of diphtheria-antitoxin was kept in the poor-house stable and that other horses used for the same purpose by the St. Louis Board of Health were singularly susceptible to tetanus, as six had previously died of this disease. Again, a similar accident occurred about a year ago in Italy and was decided to have been due to contamination of the serum subsequently to its having been drawn.—As terrible as this calamity is, when a calm, judicial view is taken of the matter, it is beyond question that the harm done is insignificant when compared to the great good that has been accomplished by serum-therapy.—The investigations of Nocard and others have proven that tetanus in animals can be absolutely prevented by prophylactic injections of tetanus-antitoxin. It would certainly seem advisable that such injections be employed in the case of all animals used to furnish diphtheria-antitoxin. Moreover, after production all such serums should be tested both as regards their antitoxic strength and for the presence or absence of the bacillus tetani or its toxins. It would also seem advisable that the horse should be kept under observation for a considerable period before making use of his serum. Most important of all, these serums should only be made by those thoroughly trained both theoretically and practically in the principles of asepsis. Stables for the horses used in the manufacture of these products should be as clean as our present knowledge will enable us to make them. Whether all this can be accomplished in municipal laboratories may be open to question, especially when we consider how meagre appropriations for such purposes are liable to be when compared to the importance of the work. Moreover, health officers are often more or less subject to the viscissitudes of politics and may perhaps in an occasional instance be lacking in a proper feeling of personal responsibility. After considering these facts some of our contemporaries urge that the manufacture of such substances be left entirely to commercial houses. To regard for their own reputations would be added fear of financial loss in the event of accident. Should such a plan eventually be deemed most expedient it is certainly to be desired that such houses and their products be subject to investigation by a permanent State board of eminent bacteriologists appointed for the purpose. T.

New Modes of Medical Advertising

Up to a year or two ago the sealed en-envelope containing a pharmaceutical advertisement was the worst bore that came to the physician's desk through the medium of the mail carrier. Since then it is quite noticeable that while the articles mentioned have not diminished, they are now more apt to be accompanied by sealed or unsealed reprints of notable special articles by notable specialists on all special subjects under the sun. "Orificial surgery" is a favorite specialty, it seems, and the orificial surgeon appears to be in the habit of taking the New York Medical Directory and posting one of his reprints to every name and address in the book. Now, though the gentleman in question *may* be actuated only by the noble and worthy purpose of disseminating scientific knowledge, certain lewd fellows of the baser sort have more than hinted that he simply desires self-advertisement and consultations. "We know not how the truth may be," but when these papers come by post morning, noon and night, on all possible and impossible medical subjects. from gentlemen whose names we never heard of before and may never hear of again,—is it not time to call a halt?

To send reprints of one's writings to one's friends and acquaintances is always correct and often a grateful task. Such reprints should be always acknowledged by the recipient as a mere matter of courtesy.—But if the privacy of one's professional life is to be continually invaded by unasked and undesired and usually unscientific communications from any *ignoramus* in the city who chooses to call himself a specialist, we think it desirable to remonstrate; and if remonstrance be not sufficient, it might be well to talk of *discipline*. B.

ORIGINAL ARTICLES

INTRAUTERINE RICKETS.

By Dr. F. C. Abbott, F.R.C.S.,
London.

THE case I am about to describe and to illustrate by means of specimen, photographs and skiagrams was so typical of rickets that I think no one will doubt that the child suffered from that disease. The child also folded up so accurately into its obvious intrauterine position, each of the many curves of its bones fitting over and so exactly correlating with the others, that I think you must also agree that they were caused by pressure during intrauterine life, pressure and constraint to which the child was subjected to a greater degree than the normal, owing to the fact of its being a twin, both twins being born viable at nearly full term.

Its intrauterine colleague, whom I also had the opportunity of examining, suffered from the same disease though to a lesser degree. I regret that I have been unable to follow up this other child, which was fairly healthy at the time I last saw it.

The conclusive cases of rickets in utero, if any, are still so few that I have felt it right to publish this case in full.

There is no doubt that the bones were soft and impressionable in utero and received impressions while there which have remained permanent. Equally, no doubt, that the child had rickets in a marked degree when it died at 14 months of age. The only remaining doubt is whether the disease which caused defective ossification and softening in fetal life was the same as that from which it afterwards suffered or whether this latter was superimposed.

The mother is extremely definite that at birth the curves of the child's limbs were exactly the same both in character and degree as they were when I first saw her.

Many of these curves are the ones commonly associated with rickets and usually explained as being due to muscular tractions or to methods of progression and the support of the body weight.

It is interesting and suggestive to see that many of these curves can be produced entirely by intrauterine position, and this must at once raise the question whether these curves have not more often really commenced at this early period, and merely become more marked after birth.

The longitudinal chest groove for the arms to rest in and the curve of the femora against the trunk are instances in point. This latter was exactly the same curve as was noted in Mr. Makins's case (a baby of 14 days old). Some of the curves on the other hand are quite unusual and can only be explained by the intrauterine folding of the child.

I rely especially in this connection on the curve on the lower end of the forearm with its convexity forwards and inwards which brings the child's hand to rest back over the shoulder, and on the curve of the right leg with its concavity forwards and outwards, across which concavity the left limb lay.

These unusual curves at once caught the eye and were only satisfactorily explained on replacing the child in its fetal posture, one which she very easily and naturally reassumed. The common talipes calcaneous of rickets can easily be explained in the same way.

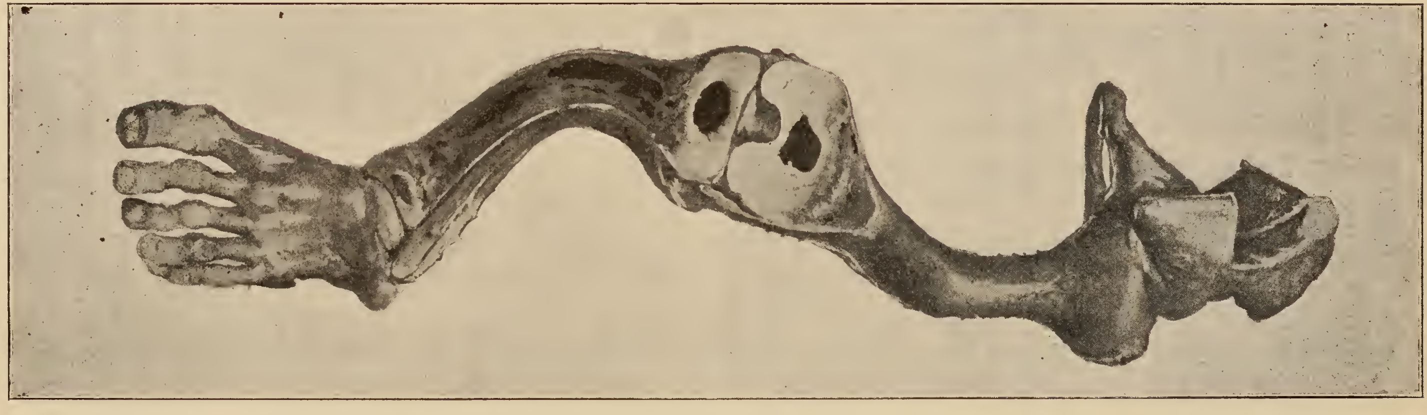
The fusiform thickenings of the shaft which I thought I felt during life were similar to those described by Sir Thomas Barlow and Mr. Makins, and were explained by the latter as being rickety disease in the diaphyseal center of ossification owing to the disease occurring at such an early period.

As, however, the rickety changes are so much more in the line of the epiphyseal cartilage rather than in the epiphyseal center itself, I do not think this explanation is very satisfactory, but rather doubt the existence of these fusiform swellings, which certainly were not really present to any marked extent in my cases though they appeared to be clinically so.

There were no marked changes either clinically or post-mortem in the liver, spleen and other internal organs.

The question of congenital syphilis must be considered as possibly responsible for the bony changes in utero and as a predisposing cause of the subsequent rickets.

The mother had eight times borne miscarriages or dead children, two of these, however, being twins to a second healthy child. Her other children, seven in number, were all



Left lower extremity, preserved in formalin, ¾ natural size.

full-time and healthy. There was no direct history of syphilis and careful examination of the present child and its male twin gave no single one of the usually accepted signs of congenital syphilis.

On the other hand, the entire absence of teeth, the large cranium, the pot-belly, the general kyphosis and other general signs were all additional proofs of rickets.

I consider the present case as possibly the most conclusive yet published, from the point of view of the curves being due to intrauterine pressure. This is perhaps because this child was a twin and therefore subjected to a higher degree of pressure than the usual.

Sir Thomas Barlow[1] and Mr. Makins[2] have both described what I think must be allowed to be conclusive clinical cases, but in neither instance was there a pathological examination made.

Sir Thomas Barlow's case was seen at ten weeks and there was a definite history of the bow-legs causing trouble at the birth. In his case, like mine, there was a history of green-stick fracture.

Mr. Makins's case was only 14 days old when seen by him. It did not, as mine did, present any unusual curves due to the intrauterine pressure, and he rather dwells on the remarkable fact that intrauterine pressure can produce the curves usually ascribed to muscular action.

In neither of these cases, however, was a post-mortem examination made, Dr. Barlow's case living, while in the other an examination could not be obtained.

The other published cases that I have been able to find were either complicated by subperiosteal hemorrhages or were not free from the suspicion of congenital syphilis.

F. B. M., a female child, was 14 months old when first seen by me at the Evalina Hospital, and died while under my care as an in-patient a few weeks later.

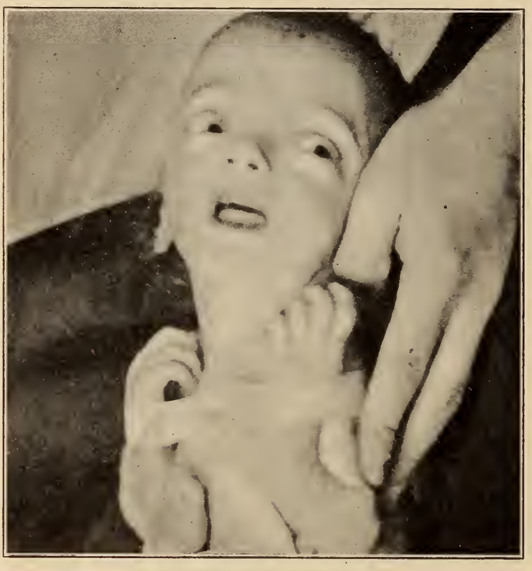
When admitted, she was extremely undersized and ill-developed, with enormous cranium and prominent eyes, toothless jaws and deformed limbs, making together a painfully grotesque picture to look upon.

Her length when admitted was only 21 inches and she weighed 7 pounds 6 ounces, though 14 months old.

The cranium appeared large in proportion to the face and the eyes were very prominent.

The hair was scanty, dry and brittle.

The skull as a whole was not typical of rickets in its shape and there were no frontal or parietal bosses. The anterior fontanelle was widely open and measured 2¼ inches long by 1¼ inches in width with very thin and easily bendable edges. The posterior fontanelle was also slightly open, as was also the whole line of the sagittal suture, in which were several more widely open spots. The interfrontal suture was still open and the bone at its edges could easily be bent. There was no heaping up of new bone along the suture lines.



Showing position in utero by which the deformity of thorax and upper extremity were produced.

There was some craniotabes in the occipital bone, probably along the suture lines.

The alveolar arches were badly developed and not a single tooth had come through, nor were any imminent. There were no scars around lips or at angles of the mouth.

The chest showed a deep longitudinal groove on either side at the outer part of the line of rib cartilages, with prominence of the sternum and of the anterior parts of the cartilages. There was a very definite rickety rosary in front, also a well marked posterior rosary at the line of the angles of the ribs.

The spine showed one large general posterior curve.

The abdomen was very full and prominent, and the wall bulged outward sharply from the everted lower chest wall.

The lower edge of the liver was depressed, but not more so than was accounted for by the shape of the chest. The spleen could not be felt at any time while the child was under observation,

The alæ of the iliac bones were flattened, felt thickened and could easily be bent like guttapercha splinting.

The clavicle showed a marked increase of the normal curves, especially of the inner convexity, and from this prominence there was increased thickness of the whole of the inner half of the bone.

The right humerus had one general curve, the convexity of which was forwards and slightly outwards, its most prominent part being much below the deltoid insertion. The epiphyses were normal, but there appeared to be a central fusiform thickening.

The radius and ulna showed a great thickening in the lower third, the convexity of which was forward and slightly inward with a thickening at this point. The epiphyses were normal in size; the power of pronation was completely lost owing to mechanical lesions.

The hand bones were normal.

The left upper extremity was approximately the same as the right, but the humeral curve was not so marked in its external bend. The radius and ulna, however, were even more sharply curved than on the opposite side, the radius having apparently been the subject of a greenstick fracture.

The upper extremities lay naturally doubled up by the side of the chest, the forearm flexed on the upper arm, the two together fitting into the groove on the chest here. The bony curves allowed the radius to fit back over the humerus with the hands resting on the shoulders.

THE LOWER EXTREMITIES.

The femora gave one long curve with its convexity forwards and outwards and with apparently a fusiform swelling at its point of greater convexity.

The left thigh was said to have been fractured, but this could not be definitely made out.

These femoral curves exactly corresponded in shape and amount to the intrauterine position of the limbs against the abdominal wall.

The right leg showed a tremendous curve with its concavity forwards and outwards; the fibula was flattened and almost disappeared at point of greatest concavity.

The curve of the left leg was in opposition to this, with convexity forwards and inwards, and exactly lay across and fitted over the opposite leg when these were placed in the intrauterine position in the abdomen.

Apparent fusiform swellings were felt at the positions of greatest curvature.

The lower epiphyses of the tibiæ alone showed any palpable enlargement.

The feet were both in position of extreme varus, the inner and outer borders becoming absolutely the upper and lower, respectively. They also assumed the position of calcaneus with unnatural ease. This corresponded to the intrauterine position of the feet against the abdominal wall, and the whole lower limbs packed up and fitted over each other and against the abdomen like a mechanical toy, every curve obviously corresponding to and being caused by the enforced position.

The child had always been weakly—often vomiting her food. She sweated profusely at night and was prone to attacks of diarrhea with very offensive stools.

The bones were soft and malleable to an extreme degree, giving, when handled, an elastic feeling. All could be visibly bent, except the very strongest, as the femur and tibia, but including skull, pelvis and all the arm bones. The child was one of twins, the last children of healthy parents. The mother altogether had had seven living children as well as eight miscarriages. These included three pairs of twins, one of each of the two previous pairs had, however, been "a false conception" and born dead. All the children were living and well, except one which had died at eight months of whooping cough. The present pair of twins were, in the mother's opinion, three weeks premature. She was well when carrying them and knows of nothing abnormal in her diet during the pregnancy.

The boy was delivered first and was born "doubled up," but the girl followed naturally and her birth gave no special difficulty. The mother is very definite that the girl's legs were then "quite the same as they are now." Neither had neither snuffles or rash. They have been brought up on cow's milk and Robinson's food.

The boy child, her intrauterine colleague, is ludicrously like the girl, with similar prominent eyes. He is backward and makes no attempt to walk or stand at 14 months. The head is large, somewhat square, and the anterior fontanelle is open but not so wide as is the girl's. The posterior is closed; he has two teeth.

The bones present the same softening, but not to so marked as do the girl's; the forearm bones and pelvis are, however, quite malleable.

The clavicles are nearly normal, the humeri show a slight outward curve at deltoid prominence. The radius and ulna show the same curve as in the girl but it is not nearly so marked.

Bending of ribs both anteriorly and posteriorly with longitudinal groove at side of sternum also present.

The femora show a slight anteroexteral curve, but tibiæ and fibulæ are nearly straight, while the feet are inclined to talipes calcaneus.

He sweats at night, and is liable to diarrhea.

The specimen shows the whole of the bones of the left lower extremity, including the os innominatum, preserved in formalin.

The color has, I think, been well preserved and the section cut through the great epiphyses at the knee joint shows typically the characteristic appearances of rickets. The actual epiphyseal centers of ossification, the normal cartilage and the successive layers of the epihyseal line, with their typical colors, are shown with almost diagrammatic clearness. The bones when the soft parts had been cleaned from them could all be easily bent and any part could be easily cut with the knife, cutting very much like guttapercha used for splinting, except that in places it gave a gritty sensation when cut by the knife. A wedge cut from the ala of the ileum shows the enormous thickening of spongy bone in this position.

Though the epiphyses are somewhat swollen there is but slight real enlargement of any of them.

Both the specimen and the skiagrams show the apparent fusiform enlargements of the shafts at the points of greatest curvature, as felt during life, to have been to a large extent, imaginary.

This may equally have been the case in the instances recorded (Sir Thomas Barlow and Mr. Makins), since in neither case was a pathological examination of the bones obtained.

In my case specimens of bone were also taken from the skull, sternum, ribs and clavicle, and all the specimens showed precisely the same characters, with typical rickety changes on microscopic examination. I do not think that anyone can doubt that at the time of its death the child was suffering from well-marked rickets, nor that the bony curves described were produced by pressure in a certain position in utero. It is therefore only open to us to allow that the child had rickets in utero, or to assume some antecedent condition to account for the softening of the bones at that time and that the rickets supervened later. From a consideration of the whole case and allowing for the history of miscarriages and of the condition of the bones, as examined after death, and taking into account the rickety changes shown in the ileum as well as in the shafts and epiphyses of the long bones, I am not inclined to accept this view.

I therefore look on the case as one of true rickets in utero with marked bony curves produced by pressure while in utero and exactly corresponding to its position while there. I also think that its twin showed the same changes to a lesser degree though the proof that it suffered in utero is not so absolute.

REFERENCES.

1. Clinical Society's Transactions, vol. xxi, p, 290.
2. St. Thomas's Hospital Reports, vol, xxiii, p, 121.

TOPOGRAPHY OF THE APPENDIX VERMIFORMIS.

It is easy to locate the appendix, even in the midst of adhesions, exudates and perplexing lesions,if it is borne in mind that the root of the appendix is invariably at the point where the three tæniæ, passing downward from the colon, meet at the cecum. This point varies in different individuals, but it is readily located by following the tænia libera downward to the cecum.—P. Mueller, *Centralblatt f. Chirurgie.—Jour. A.M.A.*

A CASE OF SECONDARY ANEMIA WITH SPLENIC TUMOR.

By John Lovett Morse, A.M., M.D.,
Instructor in Diseases of Children, Harvard Medical School; Assistant
Visiting Physician at the City Hospital and at the
Infants' Hospital, Boston.

JENNIE R. was one of twins; the other is alive and well; one brother is living; another died of "summer complaint"; the family history was negative. She was breast-fed for five weeks, after which she was given modified milk from the Walker-Gordon Laboratory for three weeks. She was then fed on modified milk prepared at home. As the mother did not report, the mixture, which was a weak one, was not changed for seven months. During this time she had no gastroenteric disturbances but had gained weight very slowly. She was then, when 9 months old, brought to the hospital on account of a slight diarrhea. This yielded rapidly to treatment and was followed by constipation. Modified milk, but of stronger percentages, was continued. She was admitted to the hospital on June first, when 10 months old.

She was fairly developed and nourished; the skin was in good condition; there was moderate pallor of the skin and mucous membranes; the anterior fontanelle was 3 cm. in diameter and level; the head was flattened on top and behind: there was no craniotabes; there were two teeth; she sat alone feebly but with the spine straight; there was a marked rosary; there was slight retraction of the chest at the insertion of the diaphragm; the heart and lungs were normal; the abdomen was distended; there was a slight umbilical hernia; the upper border of the liver flatness was at the upper border of the fifth rib; the lower border of the liver was palpable 3 cm. below the costal border. The spleen was felt running out from beneath the costal border in the anterior axillary line to the right of the umbilicus, then downward and backward to the anterior superior spine and backward into the loin; the surface was smooth, the consistency was firm; the organ was apparently tender; the notch was felt distinctly in the nipple line midway between the costal border and the umbilicus; there was no fluid in the abdomen; the epiphyses at the wrists were enlarged; the extremities were otherwise normal; there was a slight general glandular enlargement; the weight was 4,870 grams; the temperature was normal; the pulse 125; the respiration, 50.

Urine: Pale, acid, 1010, no albumin or sugar.

Blood:

Hemoglobin	40	per cent.
Red corpuscles	4,000,000	
White corpuscles	18,750	
Small mononuclear	34.4	per cent.
Large "	12.6	"
Polynuclear neutrophiles	51	"
Eosinophiles	0.2	"
Myelocites	1.8	"

The red corpuscles showed marked variation in size, shape and staining reaction. There was no tendency to large forms, but a slight tendency to oval forms; 16 normoblasts and 9 megaloblasts were seen in counting 500 white corpuscles.

She was put on a stronger modified milk and beef juice, and was given maltine and oil and syrup of the iodide of iron. While in the hospital the temperature remained normal; she took her food fairly well and did not vomit; there was a tendency to constipation.

On June 16th the tip of the spleen reached only to within 3 cm. to the left of the umbilicus. Examination of the blood on the 16th was as follows:

Hemoglobin.,	65	per cent.
Red corpuscles	5,132,000	
White corpuscles	18,580	
Small mononuclear	23	per cent.
Large "	6	"
Polynuclear neutrophiles	69	"
Eosinophiles	1	"
Myelocytes	1	"

There was moderate variation in the size and shape of the red corpuscles with slight variation in their staining reaction. There was a slight tendency to large and oval forms. In counting 500 whites, 1 microblast, 2 normoblasts and 10 megaloblasts were seen.

She was then discharged on account of an epidemic of measles in the hospital; she passed through the disease at home and was admitted to the summer hospital at Hamilton about the middle of July. Her improvement there was even more rapid than before. The spleen was not palpable after August 1st.

Examination of the blood August 16th was as follows:

Hemoglobin	65	per cent.
Red corpuscles	5,175,000	
White corpuscles	17,000	
Small mononuclear	48	per cent.
Large "	3	"
Polynuclear neutrophiles	45	"
Eosinophiles	4	"

There was a slight variation in the size and very little in the shape of the red corpuscle; none in their staining reaction. No nucleated forms were seen.

This case is a striking example of that class of the anemias of infancy which on account of its association with enlargement of the spleen has often been spoken of as "splenic anemia" or "anemia infantum pseudoleukemica." It does not deserve a specific name, however, as it is not a specific disease. The anemia is not primary but secondary and the association with splenic tumor is largely accidental. There is nothing characteristic in the blood condition. This shows nothing more than the usual changes of secondary anemia. The presence of nucleated red corpuscles, even of the larger form, is not at all pathognomic, as they may be found in any moderately severe anemia in infancy. Leucocytosis may or may not be present. The size of the spleen has no apparent connection with the degree of anemia or with the presence, absence, or amount of leucocytosis. The relation of the anemia and splenic tumor to each other is rather obscure, but in all probability neither is dependent upon the other, but both are the results of a common cause. Corroborative evidence in this connection are the facts that the enlargement of the spleen may be considerable when the anemia is mild and may be wanting when the anemia is severe. It is better therefore to classify this group of cases as secondary anemia with splenic tumor rather than to attempt any further division or to apply to it any specific means.

The evidences of rickets in this case suggest that this may have been the cause of the anemia and splenic tumor. A more reasonable explanation, however, is that the rickets was due to the same cause as the other conditions. This cause is easily found in the disturbance of nutrition resulting from an insufficient amount of food. The weak modified milk mixture ordered for her when 2 months old was not changed or increased in quantity until she was 9 months old. This amount of nourishment was most certainly insufficient to meet the demands during that time and could not fail to result in malnutrition. It is possible also that improper hygienic surroundings may have played a part in lowering her general condition. The absence of disturbances of digestion is striking.

The blood condition shows nothing unusual for this class of cases. Certain of these features, however, are of interest. As in most of the anemias of infancy the hemoglobin is diminished more than the number of red corpuscles, that is, it is of the "chlorotic" type. The leucocytosis is very slight, hardly outside of normal limits, although the spleen is much enlarged. While the total number of white corpuscles is but little increased, there is a relative increase in the number of polynuclear cells except at the last examination, in which the proportions are normal. The rapid disappearance of the nucleated red cells shows of how little importance they are in prognosis in the anemias of infancy. The large number of megaloblasts in this case would have, in an adult, strongly suggested pernicious anemia. In infancy in general they are, as in this case, of comparatively little prognostic value. They merely show the marked tendency of the infant's blood to revert to the fetal type.

The most interesting feature of the case is the rapid diminution in the size of the spleen. In two weeks the point of the spleen, which at entrance extended to the right of the umbilicus, reached only to 3 cm. to the left of the umbilicus. Two months after entrance is was no longer palpable.

EXAMINATIONS FOR ARMY MEDICAL DEPARTMENT.

The examination of applicants for appointment as assistant surgeon in the army has been resumed in Washington and San Francisco; the Army Medical Boards convened in those cities will remain in session so long as there are candidates to be examined. Seventy-six vacancies in the Medical Department still remain to be filled, and as it is desired by the military authorities that the department be filled up to its full legal limit as early as practicable, all eligible applicants will be afforded opportunity for examination; those found qualified will be commissioned at an early date. Full information as to eligibility, nature and scope of examination, etc., may be obtained upon application to the Surgeon-General, U.S. Army Washington, D.C.—*U. of P. Med. Bulletin.*

CORRESPONDENCE.

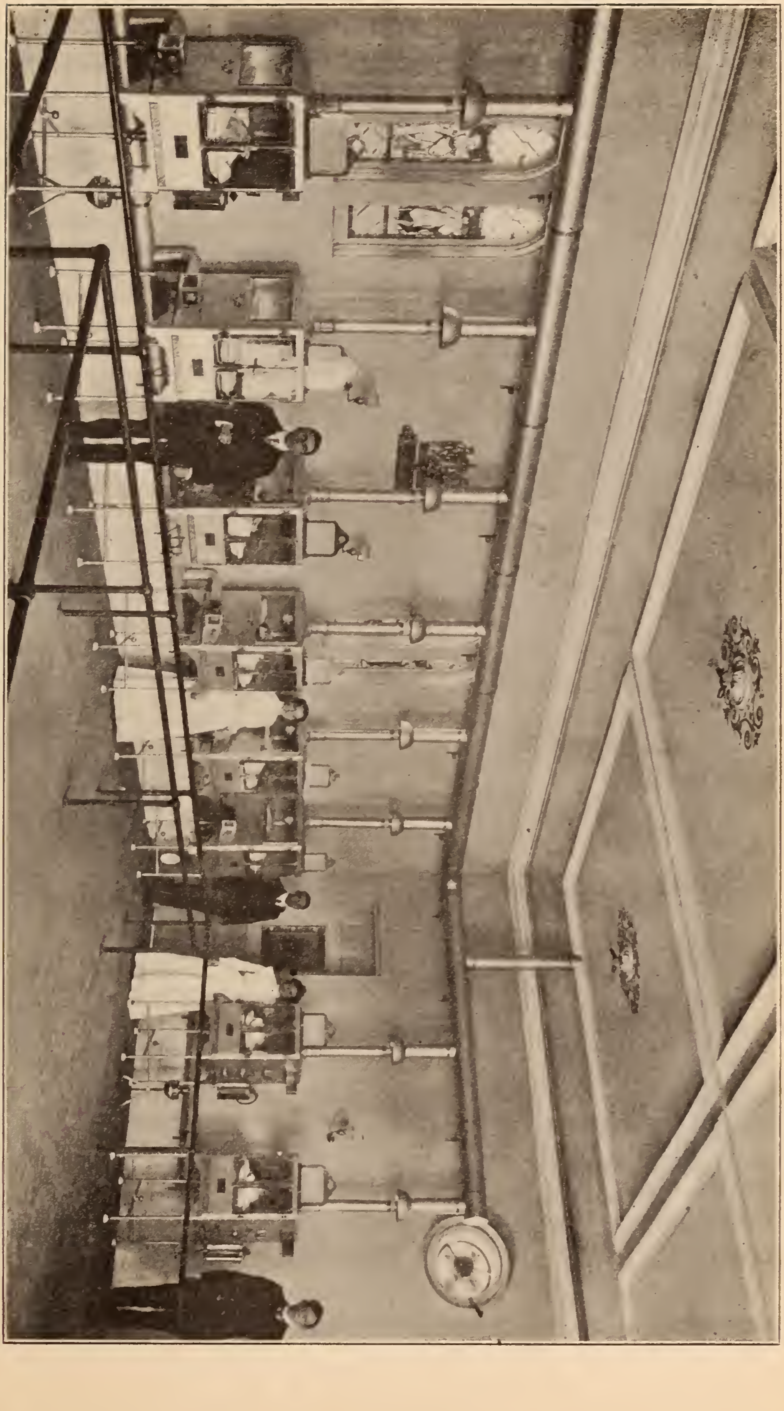
Exhibit of Infant Incubators at the Pan-American Exhibition.

In a prominent position in the Midway, that part of the Pan-American Exposition almost wholly given over to the amusement of those frivolously inclined, is situated the building devoted to infant incubators. The building is of a decidedly picturesque construction. A "barker," as is the case with all the shows of the Midway, promenades on the outside proclaiming in strident tones the especial merits of the incubator exhibit and drawing attention to the fact, that while it is conspicuous for the absence of any unpleasant features, at the same time it is of an eminently instructive and interesting nature and well calculated to provide many hints to mothers and to females generally in the successful rearing of weakly infants.

Whether due to the eloquence of the gentleman in the tall hat, or to that strain of curiosity said to be the characteristic of every woman, it must in truth be allowed that the exhibit is one of, if not the most popular, in all the Midway.

But before entering upon a detailed description of the infant incubators' exhibit, a brief review of the origin and rise of the system will be apposite.

The employment of incubators for the purpose of saving the lives of prematurely born or weakly infants, although much on the increase in all civilized countries of the world, has not as yet become a general factor either in the United States or in Great Britain. France and Germany use such methods to a large extent and, it is claimed, with satisfactory results. One of the most essential measures to preserve the lives of prematurely born or weakly infants is to protect them from change of temperature and cold. In bygone days these children were wrapped in wadding or sheepskin with the wool left on. In Silesia and Westphalia infants were sometimes placed in a jar filled with feathers. In the United States the cot or cradle was placed near the hearth, a custom which en-

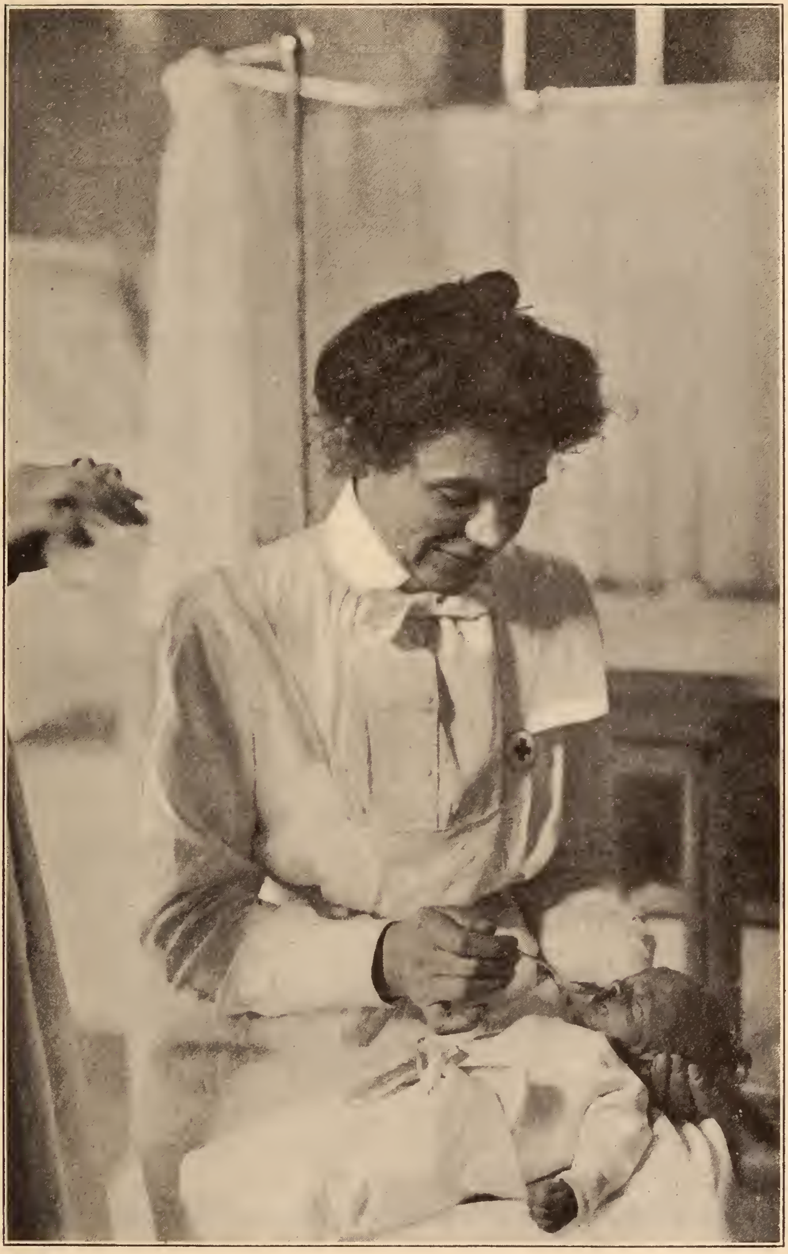


Showing a Section of the Incubator Ward. Each incubator contains an infant.

tailed the necessity of watching the fire, by day and by night, so that the temperature should be kept as constant as possible. Hot water bottles inserted in the bedding was a custom also largely resorted to. Devices of this nature, however, could not be relied on; their success was too dependent upon chance.

Weight of child, 2 pounds and 2 ounces.

Dr. Credé, of the University of Leipzig, some sixty years ago became impressed with this unfortunate condition of affairs and resolved to effect an improvement upon those primitive and untrustworthy methods. He designed a sort of box with double metallic sides, the space between these walls to be filled with hot water in order to maintain the wished for temperature. The infant in a cradle, and covered with warm clothing, was placed within the receptacle. In 1878 the first attempt was made to construct an infant incubator on scien-



Feeding an infant through the nose with a gavage spoon.
Weight of child, 2 pounds, 8 ounces.

tific principles. The celebrated Dr. Tarnier was struck when visiting the Jardin d'Acclimatation, at Paris, by the artificial *couveuses* for the rearing of poultry, and the thought entered his mind that a similar apparatus, might be utilized for the rearing of children. He therefore ordered to be made a *couveuse*, sufficiently ventilated and large, to contain one or two infants. Although defective in many respects, notably in the mode of heating, M. Tarnier's innovation was attended with a fair measure of success and many lives were saved by its agency.

According to Dr. James Vorhees, and few will be found to disagree with his conclusions, four problems must be solved in the care and management of young infants. These are: (1) Maintenance of a proper temperature; (2) prevention of exhaustion; (3) the administration of the proper amount and kind of nourishment; (4) the avoidance of infection.

These indications are met as follows: In a pleasant and well-lighted and sunshiny room, a section of which is portrayed in our first illustration, whose walls and floors are of impermeable material, are placed a dozen incubators. These incubators are of metal and glass and therefore can be washed and disinfected with the greatest celerity and are elevated above the floor on steel rods. The infant within is suspended on a couch of woven wire, well padded and covered with linen; he is swaddled after the German fashion. A card is affixed above each incubator, stating its occupants' initials, the date of birth, date of admission to incubator and other details.

The heat of the incubator is regulated by a themostat, the construction of which is so delicate that the slightest variation of temperature suffices to set it in motion. Consequently the heat within the incubator, never varies more than 2° F.

To ventilate the incubator, there is a pipe which is conducted through the wall of the building so that no air but outside air is supplied to the infant within. This pipe delivers the air into a box at the side of the incubator, but before the child is permitted to breathe the air, it is first moistened and washed by being passed through a layer of absorbent material suspended over a utensil containing an antiseptic solution. In the same box is dry wool which takes up any physical impurities. A second pipe conducts the air from this box into bottom and center of the incubator. Thus the air is washed, filtered and warmed before it reaches the infant, and so long as the lamp or gas burns the temperature and ventilation within the incubator will be automatically maintained.

Every two hours, by day and night, the infants are taken out and supplied with breast-food and coverings cleaned. Our illustration shows a mite which had just been brought to the institution, and the third a babe receiving nourishment by the gavage spoon through the nose.

Adjoining the incubator room is the model nursery, constructed principally of glass, in which is a small pharmacy. Contrivances for sterilizing milk, scales for weighing, miniature tubs for bathing, etc. It need hardly be said that scrupulous cleanliness is observed in every minute detail of the establishment. The claim is put forward that by means of the improved incubating system 85 per cent. of prematurely born and weakly infants are saved.

BASHAM’S MIXTURE.

An old, time-tried tonic in urinary affections, particularly in degenerative conditions of the kidneys, is ‘‘Basham’s mixture.” The virtues of this preparation were extolled in lecture rooms quite half a century ago, and the same is said to-day. In its particular field of usefulness it has well stood the test of time; its composition is:—

℞	Tr. ferri chlor	f.ʒiij
	Acid acet. dil	f.ʒiss
	Syr. simp	f.℥ss
	Liq. ammon. acetat, q.s. ad	f.℥iv

M. Sig.—One dessertspoonful every three or four hours. —*Clinical Review.*

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE--SECTION ON PEDIATRICS.

Stated Meeting October 10, 1901.

W. L. Stowell, M.D., Chairman.

Amaurotic Family Idiocy.—Dr. Sara Welt-Kakels presented a boy, 1 year old, born of perfectly healthy parents. There were four children in the family. The first child was said to have been hydrocephalic; the second was now five years old and perfectly well, and the third child, three years old, was also perfectly healthy. The little one presented this evening was born after a normal labor and was only slightly asphyxiated for a moment. He is rather plump; the eyes have a vacant stare and there is slight strabismus on one side. The child does not seem to notice anything, and the pupils react very sluggishly to light. He starts at any noise; he cannot hold the head up and does not move the lower limbs. The deep reflexes are quite exaggerated. Dr. H. Knapp, who examined the eyes, reported that the optic nerves are pale and the area around the fovea centralis distinctly but not intensely opaque. The opacity does not extend beyond the macula. He was not able to find any other changes in the fundus. According to Sachs, the following are the chief features of this disease: (1) Defective mental development; (2) weakness of all the muscles, terminating in paralysis; (3) gradual loss of sight up to total blindness; (4) marasmus, usually before the end of the second year. Apparently the entire nervous system is affected.

The Modern Technique of Blood Examinations.—Dr. F. C. Wood made some remarks on this subject. Regarding the determination of hemoglobin, he said that the Fleischl hemoglobinometer was still in use in laboratories and hospitals but had been largely discarded in clinics. There had recently been published a small book consisting of pads of filter paper and color scales. He had found this extremely useful in clinical work, for with it a determination of the hemoglobin could be made within 10 per cent. in the course of a few minutes. The blood is placed on the paper until it has soaked in sufficiently for the paper to have lost its gloss and then the color of the blood spot is compared with the color scales. This comparison is made by daylight. The Oliver hemoglobinometer is useful and is so portable that it can be carried in the pocket, but for its use artificial light is required. It will estimate the hemoglobin within 2 per cent. The speaker said that there was no method known by which the blood corpuscles could be quickly and easily enumerated. Such an enumeration could be done more easily with a Zeiss apochromatic lens of 8 mm. and a large eyepiece, as this combination gave a large field and well defined lines. In making smears the modern tendency was to make them entirely on the slide, as this required less skill than where cover glasses are used. His method was to put a drop of blood on a glass slide and then, holding the latter slightly obliquely the end of another slide is drawn quickly over the first slide. This distributes the blood well. Dr. Wood said that one of the best and most practical methods of staining was that devised by Jenner, of London. The staining agent is composed of a combination of eosin and methylene blue dissolved in methyl alcohol. The smear is dropped into the fluid and allowed to remain for one minute and then is washed with ordinary water. By this combination the specimen is stained and fixed at the same time. The preparation is now ready for examination with the microscope. This stain has largely superseded the older and more complicated ones for blood examinations. For examining blood for malaria this Jenner stain is not well adapted. A compound staining of carbolthionin is better. In the æstivo-autumnal cases from the tropics it was sometimes very difficult to make a diagnosis, and one naturally suspected any small ring form seen in the blood to be an artefact. By the use of proper nuclear stains such artefacts can be detected. One of the best methods of accomplishing this is by means of the Goldhorn stain. Many workers prefer to examine the malarial blood fresh at the bedside, but this Dr. Wood considered an error because of the trying conditions under which such work must be done. He had observed that if the Widal reaction were done with the serum there would be about 20 or 30 per cent. more positive results than where the dried blood was used. He had discovered that many of the blood-counting chambers imported from Europe are very inaccurate owing to the fact that in this warm climate the cement of these chambers softens and changes the depth of the chamber.

The Peculiarities of the Blood in Infancy and Childhood.—Dr. G. M. Light read this paper. She said that the blood of the infant tends constantly to revert to the embryonal character, and that lymphocytosis is pronounced. The red count diminishes to the end of the third year and then rises to the twelfth year, when the adult balance is established. The nucleated cells, so constant in fetal blood and even persisting at birth, should not appear in the blood of healthy infants after the first day. In chronic gastrointestinal disorders the associated anemia is progressive and a moderate leucocytosis is stated to be the rule. Typhoid fever and grip in childhood, as in adult life, are distinguished by an impoverished blood-count and the absence of leucocytosis except in the presence of inflammatory complications. In pneumonia the significance of leucocytosis follows the adult rule. Tuberculosis without cavity formation is unattended by leucocytosis. Leucocytosis in scarlet fever is the rule and eosinophilia is constant and persistent, and in this way the disease may be distinguished from measles, in which there is no increase in the white cells except where there is a severe complicating bronchitis. True leukemia is quite rare in children. The onset is sudden and the tendency of the case is steadily downward. The clinical resemblance between these cases and certain forms of purpura make the blood examination imperative as a means of diagnosis. Rotch states, that of 2,063 infants treated in hospital practice in Boston during the past ten years not one has presented an idiopathic anemia.

A Case of Severe Secondary Anemia in a Child of Two Years.—Dr. L. E. La Fetra reported this case by the courtesy of Dr. L. Emmett Holt, in whose service at the Polyclinic it occurred. The patient was a girl of two years who had been sent from Kentucky for treatment, a diagnosis having been made of pernicious anemia and a bad prognosis given. The child had never been nursed, but had done well on cow's milk for some months. In the summer of 1898 the child had had diarrhea and had become excessively white. Although iron had been continuously administered there had been constant anemia and she had gradually lost the power of standing. On January 1, 1900, she had had her first attack of spasmodic stoppage of breathing. Physical examination on March 13, 1900, had been made from necessity under chloroform, the child being so peevish and irritable. Ears and face were waxy, and there was some edema of the feet. There was moderate enlargement of the liver and spleen, but no enlargement of the lymph nodes and no evidence of rickets. The hemoglobin was 39 per cent. and the red blood cells 2,100,000. The urine examination was negative with the exception of a moderate amount of indican. No change was made in the diet further than to reduce the feedings at night, and no medicine was given for the first few days. Improvement had been immediate, and when it had become evident, peptomangan, ½ dram, had been given with Fowler's solution. In two weeks the hemoglobin had increased 5 per cent. In the next fortnight there was another increase of 5 per cent. in the hemoglobin. About the middle of May the child had returned to her home, and since then it had steadily improved. A report received a few days ago showed that she was in perfect physical condition. The case was presented to show, (1) that in such cases a diagnosis without a blood examination is mere guesswork, and (2) that a strict regimen for hours of feeding and sleep were fully as important as the character of the diet and medication.

A Case of So-Called Von Jaksch's Anemia.—Dr. C. Herrman presented this report. The subject of it was a female a year and a half old, born of healthy parents. She had been first seen on May 10, when 17 months old. For the last few weeks the child had been noticed to be growing paler and thinner. Examination showed a large splenic tumor extending from the eighth intercostal space above the crest of the ileum below. The liver extended distinctly below the free border of the ribs. There were epiphyseal enlargements in the ends of the radius and tibia. Examination of the blood on May 14 showed red blood cells, 2,800,000, and the hemoglopin 35 per cent. On June 1, a petechial eruption had appeared on the face, arms and legs. On June 27th the case had been admitted to the Mount Sinai Hospital. A differential blood count showed 30.3 per cent. polynuclear cells, large 29 and small leucocytes 31; eosinophiles 2.1. On July 3d the child had developed pneumonia. On August 6th there had appeared a purpuric eruption on the arms and legs and fresh areas of consolidation in the lung. A differential count showed polynuclear cells, 34 per cent.; large lymphocytes, 40; and small, 24; eosinophiles, 2. On August 15th a vesicular eruption had appeared and the child had died of exhaustion on September 1st. The speaker said that in 1889 von Jaksch had described a form of anemia that goes by his name, but at the present time clinicians are inclined to look upon this as one of the forms of secondary anemia. However, if these cases of anemia were secondary it was often difficult to discover to what they are secondary. In the case just reported there was no syphilis, tuberculosis, malaria, intestinal catarrh or intestinal parasites. These cases do not respond so well to antirachitic treatment as cases of rachitis pure and simple. In the few autopsies recorded the changes characteristic of pernicious anemia had been absent.

A Case of Splenomyelogenous Leukemia in a Child of Eight Years.—Dr. H. Heiman, who reported this case, said that modern studies of the blood had enabled one to distinguish in childhood only two types of leukemia—the lymphatic and the splenomyelogenic. Each of these varieties of leukemia he believed to be a distinct disease *per se*, although at present this could not be demonstrated at the bedside. The subject of the present report was the second child of a family of four, and had been born after a normal labor. Her father had died of alcoholism. The child was emaciated; and there was a large splenic tumor extending almost down to the pubes. The heart, lungs and kidneys were normal. The child had remained under his observation until death had occurred eight months later. A number of blood examinations had been made. In lymphatic leukemia there was usually a diminished number of red cells. In the acute types the large lymphocytes predominate. In the pseudoleukemia of von Jaksch the blood findings show some of the characteristics of secondary pernicious anemia; hence he looked upon this as a distinct pathological entity, occupying a transitional position between secondary anemia and leukemia. Hodgkins' pseudoleukemia also gave a clinical picture of leukemia but the blood finding was that of a simple leukemia.

Cases of Leukemia:

Dr. Theodore C. Janeway presented a child suffering from leukemia, and reported two other cases. He had seen one case four weeks before death and at that time the picture had been a typical one of leukemia. The child was exceedingly pale, and the skin of a lemon-yellow color. There was marked enlargement of the spleen and moderate enlargement of the liver. The lymph nodes were enlarged, and there were numerous blotchy hemorrhages all over the retina. A week before death the child had begun to vomit and have hemorrhages. With this the abdomen had begun to shrink, so that at death it had been of normal size. At the autopsy it was found that the reduction in the size of the spleen and lymph nodes had been so great that to those who had not seen the case during life the diagnosis seemed to be in doubt. Microscopical examination, however, had proved the case to be undoubtedly one of leukemia. There was about 1 leukocyte to 40 cells. The white cells were about 99 per cent. lymphocytes, mostly large ones. Another case referred to was that of a child of six years. In that case the first lymph node to enlarge had been one under the masseter muscle. A few months later there had been general lymphatic enlargement with increase in the size of the liver, but without hemorrhages or patches on the retina and without hemorrhages throughout the body. There was 40 per cent. of hemoglobin and almost 5,000,000 red cells. The differential count gave about 98 per cent. of the white cells lymphocytes, for the most part of the large variety. The case therefore was clinically one of chronic leukemia, though the blood picture was that of an acute leukemia. The boy presented to the section had been ill for about one year and a half. Under an energetic arsenic treatment there had been a decided reduction in the size of the spleen. The only symptoms had been those referable to the weight of the spleen.

Dr. JANEWAY said, regarding the errors found by Dr. Wood in the Thoma-Zeiss blood counting chambers, that the cement in them is readily soluble in alcohol or ether, and if either of these fluids were used in cleansing the chamber this would readily explain the loosening of the bottom of the cell.

Dr. HENRY DWIGHT CHAPIN expressed his pleasure at the presentations of the evening, but was inclined to think the results of blood examinations were not nearly so accurate as the figures made them appear to be. For example, he had used the hemoglobinometer of Gowers for about a year and had found that there were great differences in the results obtained by different individuals.

Dr. DAVID BOVAIRD spoke very highly of the Jenner stain which, he said, had made it possible for him to make blood examinations in connection with his office work. It could not be denied that pediatricians were behind those in general practice in their knowledge of the changes occurring in the blood of children. The case reported by Dr. La Fetra undoubtedly represented the form of anemia most commonly met with in children.

Dr. C. G. KERLEY said that secondary anemias were those most often encountered among children. By far the majority of these cases that he had seen had been secondary to intestinal derangement. In his experience medicinal treatment had not been of much importance, the chief benefit being derived from a proper regulation of the diet and the attention to hygiene.

Dr. H. HEIMAN said that he had lately made use of the Jenner stain and had found that it did not give the red color of the red cell and that it caused a great deal of precipitation resembling in this respect that produced by Gram's method. In the many secondary anemias of childhood, particularly those due to septic conditions, he did not believe iron was of value; the conditions were entirely different from those found in chlorosis.

BOOK REVIEWS

Essentials of the Diseases of Children. By William M. Powell, M.D. Third edition; thoroughly revised by Alfred Hand, Jr., M.D.; 12mo, 250 pp. Philadelphia and London: W. B. Saunders & Company. Price $1, net.

In this revised edition the publishers announce that the section on infectious diseases has been rewritten, as well as many of the paragraphs on pathology; and that a number of new chapters have been added, among others, one on infant feeding. We have expressed frequently the doubt whether students of medicine should be encouraged to use "compends" on subjects so important and so vast as that of pediatrics. This volume is about as good as the average perhaps, though this is not high praise. We note that the chapter on "malaria" is about as full of error as an egg is of meat. It seems to have escaped revision altogether.—We doubt, too, whether a medical student could do aught but blindly commit to memory the article on pernicious anemia. Yet in justice it ought to be said, also, that many other paragraphs are accurate, full and well brought up to the latest knowledge. B.

Eczema; With an Analysis of 8,000 Cases of the Disease. By L. Duncan Bulkley, A. M., M.D., New York; 8vo, pp, xii, 368. G. P. Putnam's Sons. 1901.

The book, which is described as the third edition of Bulkley's "Eczema and Its Management," is pleasingly written, authoritative and thorough. It is rarely the reviewer's good luck to find a volume as complete and satisfactory as this one. The concluding chapters on "diet" and "hygiene" in eczema ought to be carefully read by every practitioner of medicine who ever saw or treated a case of eczema.—The press-work, binding and type are of an unusually high order of excellence. B.

TEMPLE PRIMERS: THE CHILD; HIS NATURE AND NURTURE. By W. B. Drummond, M.B., C.M., M.R.C.P.E., Physician to the Western Dispensary, Edinburgh; pp. 158. J. M. Dent & Co., Aldine House, Bradford Street, London.

It rarely falls to this reviewer's lot to take in hand a book small or large, so pleasing, so sympathetic and giving evidence of so wide a culture as the little volume above described. In small compass it contains a world of wisdom, and no parent, teacher, nor pediatrist should be without it. After preliminary chapters upon the feeding and care of infants, the author takes up in successive chapters the senses, muscles, emotions, intellect and will, and closes with a chapter on habit (one of the best in the book), and a discourse on the kindergarten. We regret that lack of space precludes the quotation of many admirable passages we should like to comment on. B.

PHYSICIANS' VISITING LIST (Lindsay and Blakiston's) FOR 1902. Fifty-first year of publication. Philadelphia: P. Blakiston Son's & Co., 1012 Walnut street.

This publication has proved its usefulness, as readily appears from the fact stated above,—"fifty-first year of publication."—It is issued for 25, 50, 75, or 100 patients per month, and there is also a "perpetual edition" and a monthly edition. The arrangement of the numerous tables of doses, etc., is compact and accessible. It is a handy and useful pocket-book for all general practitioners B.

SEXUAL HYGIENE: Compiled from books, articles and documents, many not heretofore published. By the Editorial Staff of the *Alkaloidal Clinic*. 12mo, pp. 269. The Clinic Publishing Co., Chicago.

The following list of subjects taken *seriatim* from the table of contents will shed some light upon the nature of this little book: Continence, masturbation, incomplete or delayed intercourse, frequency of intercourse, prevention of conception, etc. While the book aspires to high ideals, much that is revealed is handled without gloves. T.

PRACTICAL NOTES

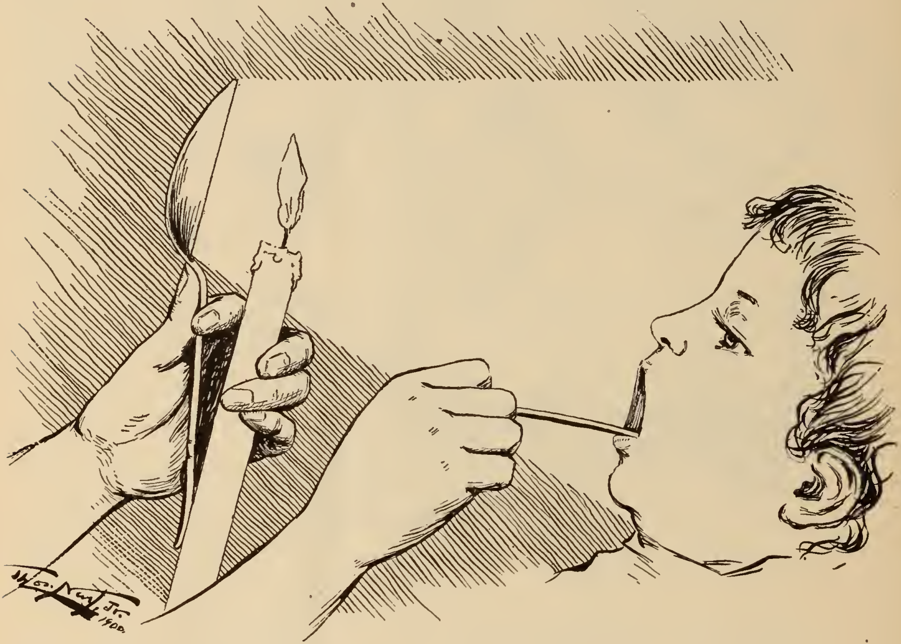
HOW TO EXAMINE A CHILD'S THROAT.

The importance of examining the throat of a child whenever the little one seems to be ill is rarely realized by mothers. So many affections of childhood begin in the throat or have their seat in this region, that physicians are in the habit of examining the throat of every sick child, even if there is no reason to believe that the trouble lies there. As a matter of fact young children rarely complain of pain in the throat. One of the first things that a mother should do, therefore, when her child shows signs of impending illness, is to look into his throat. The illustrations show how this is to be done.

The child is held sitting upright in the nurse's lap. His head rests upon the nurse's shoulder and is slightly tilted backward. His hands are held gently but firmly at the wrists by the nurse. Holding the arms at the elbows will not do as well, because in this way we cannot control the movements of the forearms and hands. It is not necessary to hold the child's head unless he is very restless, when a third person should place the hands on the baby's temples and thus control the motions of his head. The room must be darkened if the examination is conducted in the daytime.

The mother now seats herself in front of the nurse and lights the candle, taking care to attract the baby's attention to the bright flame. A large tablespoon is now so adjusted behind the candle that the center of the flame is approximately opposite the hollow of the spoon. The mother grasps the candle and the spoon with her left hand in the manner shown in the illustration. Moving her hand from side to side and from above downward she now throws the spot of light formed by the candle upon the child's mouth. Then she moves her hand back and forth between the child and herself until she finds at what distance the spot of light appears brightest. It is very important to hold the candle at just such a level and at such a distance, for it is thus that we can get the best illumination for the throat. The spot of light is formed from the rays of the candle which are thrown forward by the bright lining of the spoon, which acts like a hollow mirror.

In nine cases out of ten the baby will have opened its mouth by this time in sheer surprise, but if it is peevish all of our maneuvers may not have attracted his attention. Gently depressing his lower jaw for a fraction of an inch, the handle of a second tablespoon is introduced into the mouth and pressed upon the tongue. A little practice is necessary to execute this last act satisfactorily. The handle of the spoon should first be introduced until it reaches the back part of the tongue, and then, holding the spoon as shown in the illustration, the mother presses gently downward and at the same time forward towards the child's chin, taking care not to injure the gums or the teeth of the baby. In older children there may be so much resistance to any attempt at opening the mouth that this cannot be done in the way described. In such cases it is best to await an opportunity and to introduce the spoon into the baby's mouth as soon as he begins to cry, as he is very apt to do in this situation. The bright spot of light will now be seen at the back of the mouth and the candle should be once more adjusted to get the brightest light into the throat. Looking past the candle the mother now sees the back of the tongue



and above it the pink arch of the soft palate, with the little tongue hanging in the middle. Behind this is seen the wall of the gullet. At the bases of the arch are two fleshy lumps, the tonsils. It is wise for the mother to become familiar with the appearances of the throat of a healthy child. Any changes from this picture will necessitate the attendance of a physician.

In health the tonsils are small and of the same color as the healthy lining of the mouth. They do not take up much room in the throat and do not interfere with the passage of food. Should they be unduly large or of a darker color, or covered with whitish, yellowish, grayish or greenish patches, or studded with minute white or yellowish dots, there is some trouble with the child's throat that requires the immediate attention of the physician. The same is true in case the arch of the palate or the little tongue be swollen, red, or show any white, yellowish, grayish, or greenish patches, or if the wall of the gullet, instead of hanging down perfectly flat, appears to bulge forward, pushing the arch of the palate in front of it.

By timely examination of her child's throat the mother may recognize that something is amiss with the baby and may avoid unfavorable consequences by calling the doctor before graver conditions develop.

Hardened wax in the external ear can often be removed readily by injections of warm water and soap, soda or ammonia. Many cases resist this and require the softening effects of glycerine or sweet oil for a day or two before syringing. Do not bother with these long processes, but use a half-strength solution of hydrogen dioxid in the ear for about five or ten minutes. This will disintegrate the hardest plugs and they can be removed with very little syringing. I have yet to see the case in which this process has caused irritation or inflammation. Do not use too much force with the syringe. Wipe the ear perfectly dry with absorbent cotton and apply petrolatum. Wear a small plug of cotton in the ear for one day after removal.—*Phila. Med. Jour.* .

ABSTRACTS

A NOTE ON THE MORBID CONDITIONS SIMULATING ADENOIDS.

WYATT WINGRAVE (*Brit. Med. Jour.*, Sept. 28, 1901, says:) A large number of children come under our observation who, while exhibiting some or all of the classic symptoms of adenoids, are found on examination to be free from that trouble.

These cases increase in number as laymen become more familiar with the existence of this affection and are, consequently, prompt to seek relief with a ready-made diagnosis.

It may happen even that the classical signs are present in so striking a degree that a detailed inspection by finger or mirror is considered superfluous by the practitioner himself, and he takes their existence for granted. For this there is much justification, since digital exploration is not always expedient without an anesthetic in the case of a very sensitive child accompanied by a hypersensitive parent.

Posterior rhinoscopy is proverbially difficult in children, especially those who are the subjects of enlarged faucial tonsils; we have, therefore, practically to depend upon our sense of touch for a positive confirmation and any other evidence, however conclusive it may appear, is at the best only presumptive.

Still further, complete removal of tonsils and adenoids is not infrequently followed by persistence of the symptoms, and we are often unjustly inclined to blame the parents for neglecting the necessary post-operative treatment. Examination of such a case will probably reveal one or more of the conditions to be described.

Excluding those forms of nasal obstruction readily recognized by anterior rhinoscopy, the morbid conditions symptomatic of adenoids may be thus grouped: (1) Diminutive choanæ and nostrils; (2) low vault of naso-pharynx; (3) paresis of soft palate and pharynx; (4) vomerine crest; (5) distortion of vertebral column; (6) retropharyngeal abscess; (7) hypertrophy of palate tuberosites; (8) webs and neoplasms.

"MEN HAVE TO SPIT."

Such is the sage observation of a New York Solon at one of its police courts. If by this is meant that they "have to spit" as a constant and continual habit, the proposition is not true, and comes with bad grace from one whose duty it is to administer the law as it stands. If it means that occasions once in a way overtake all of us when a single act of expectoration may be an absolute necessity, we may reply that there are other acts of Nature which men have to perform, yet which they are not permitted and very few attempt to perform in public. If the practice is merely a habit it must be stopped, both on account of its unwholesomeness and of its disgustingness. If in a given case it is the result of disease then it should be properly treated, as would be done with a case of bowel or bladder complaint, and in the meantime the necessary occasional act should arouse such stringent efforts on the part of the sufferer to be as little disgusting as possible, as he would make were his trouble of the other kind named Most people carry pocket handkerchiefs, at any rate. The real unfortunate could at least make use of that article to expectorate into. For the filthy habitue no one need entertain any greater sympathy than he would for one who should offend in the other directions referred to.—*New York Medical Journal.*

PROGRESS IN PEDIATRICS FOR THE PAST YEAR.

A. C. Cotton, M.D., writes as follows: The past year has seen the term "inanition fever," as used by Holt, more generally discussed and accepted, in lieu of better explanation, for otherwise unaccountable high temperatures occasionally seen in the first days of infancy.

Concerning infant feeding, the champions of different theories have all had their chances of being heard both in forum and in clinic. To say that honors are easy would perhaps best express the result with a tendency rather towards conservative electicism. That scientific feeding has received a check, however, no one for a moment must claim, since the controversies of the exclusivists have tended to bring all careful feeders up to a percentage basis.

The opponents of diphtheria antitoxin, presumably overwhelmed by the array of diminished mortality statistics, still refuse to stay dead, but are occasionally galvanized into a semblance of life by some untoward results due to errors in the technique, in the doses. or in the methods of administration of that valuable agent. Quite an amount of evidence has accumulated to warn us that instead of possessing a finished therapeutic agent we are but learning the alphabet of serum therapy. Modes of preparing, testing and administering, as well as the dosage of this remedy, present problems to be worked out carefully in the laboratory and at the bedside. Especial attention should be given to the selection of cases and the effects upon individual patients, it being the duty of each therapeutist, however humble his station or limited his field, carefully to observe and record the phenomena in this really new line of therapy.

One of the oldest of therapeutic procedures, the administration of clysters, has in recent years assumed a most important place in the practitioner's armamentarium. In no class of cases, perhaps, has the growing appreciation of its value been more marked than in the treatment of children. The fountain syringe is invaluable, not only for the unloading of the lower bowel by the watery enema or the cleansing of the colon from morbific material, or the stimulation of peristalsis for bringing down the contents from the small intestine, but also for the reduction of pyrexia by high colonic flushings with cold water. So also by this means the stimulating effect of heat may be obtained in collapse, and, perhaps, most important of all, the repletion of the vascular system secured in cases of threatened syncope from exsanguination or depletion due to the colliquitive diarrheas or other causes. This may be done by copious enteroclysis of normal salt solution. In addition to this the value of nutrient enemata in cases of gastric intolerance cannot be overestimated.

In this method of feeding it is worth while to mention that rectal toleration may be secured and absorption promoted by previous copious douching with hot water.

SUBCUTANEOUS INJECTIONS OF PARAFFIN IN SURGERY.

Ludwig Moszkowicz (*Wien. Klin. Wochenschrift*, June 20) says: The paraffin employed should be white, of the consistence of lard, and have a melting point of 96.8° to 104°. Liquid and solid paraffin should be mixed until these properties are obtained. Hard paraffin irritates the surrounding tissues and may cause suppuration; besides, in order to prevent its solidifying in the needle of the syringe, it must be injected very hot, and there is danger of producing thrombosis in the neighboring veins and subsequent pulmonary embolism.

This is the probable explanation of the case reported by Pfannenstiel, who injected solid paraffin with a melting point of 113° for incontinence of urine, and observed symptoms of pulmonary embolism. In more than 30 cases in which paraffin has been injected in Gersuny's clinic no accident has occurred. The paraffin employed is semiliquid at body temperatures, and becomes encapsuled without exciting any inflammatory symptoms. Where the tissues are dense and unyielding Schleich's infiltration-anesthesia should precede the injection of paraffin, of which only small quantities should be introduced at a time. When first introduced the subcutaneous paraffin feels doughy, a week later it is tough but still capable of some alteration of outline when pressed, and in one or two months, that is after encapsulation, its hardness is cartilaginous.

The following technique should be followed: The paraffin is sterilized by boiling in a porcelain dish over an open flame. The dish is then placed in cold water. The syringe is then filled when the paraffin is still liquid, but the injection is not made until it has regained its normal consistency and issues from the needle in a fine wormlike thread. Unless the needle is accidentally introduced into a vein embolism is then probably impossible.—*Medical Review*, London.

A FEW "DONT'S" IN THE USE OF COLD WATER IN FEBRILE CONDITIONS.

Baruch (*Therap. Gazette*) summarizes a number of rules which may be accepted as guidance in using the cold bath in the sick-room in treating febrile stages. The information is to the point and may very well be heeded:

Don't bathe with cold water to reduce temperature, but to refresh the fever-stricken patient.

Don't permit cyanosis or chattering of the teeth; stop.

Don't stop bathing because the patient complains of chilliness unless the teeth chatter.

Don't raise the bath temperature on the latter account; shorten the duration of the bath and increase friction.

Don't neglect the friction during every cold procedure; it prevents chilling.

Don't disregard the well-ascertained fact that the Brand bath (of 65° to 70° F. every three hours when awake, with active friction) is the ideal bath for typhoid fever only.

Don't use the Brand bath in a bathroom.

Don't give up cold bathing because the ideal bath is not obtainable; other procedures are useful.

Don't use the ice-coil on the abdomen; it has no refreshing effect and renders the skin beneath it cyanotic.

Don't lose sight of the fact that the chief aim of all coid procedures is reaction.—*Clinical Review.*

"PRESCRIBING DRUGS AND MEDICINES"

Is defined by Judge Elliott, of New York, as necessary to the practice of medicine. Those who do not do these things are not liable to legal damages for practising medicine without a license. So when little Irma Grossenbach died after being prayed over by the unchristian unscientist, then the unchristian unscientist was not to blame because she was not "practising medicine." If this is to be the law and such is to be its interpretation one of two things is needed:

1. The law should be amended by some one with a grain of common sense, and made so explicit that the silliest pseudopath can understand it, that modern medicine has neither necessarily nor even generally anything to do with drug-giving.

2. Or, if medicine-prescribing is required to constitute one a legal practitioner then a new law is demanded to the effect that those who practise pseudopathy without giving medicine are criminals. To kill a child by not giving drugs is as much criminal malpractice as to kill it by wrong drugs, or by too much drugging.—*American Medicine.*

A REPORT OF TWELVE OPERATIONS ON INFANTS AND YOUNG CHILDREN DURING SPINAL ANALGESIA.

WM. S. BAINBRIDGE (*Arch. of Ped.*, July, 1901) says: Subarachnoid injection as an operative means continues to demand the attention of the medical profession. Competent evidence is gradually accumulating and it should not be long before the final verdict can be reached.

Those who have used this method have largely employed it in adults of all ages. In the *New York Medical Record* of December 15, 1900, he reported the first work done along this line on young children. Since then he has had twelve operations on patients from four months to six and a half years, and over forty on those under fifteen years of age.

GENERAL COMMENTS.

Children of all ages stand this method exceedingly well. They may cry out before or during the injection, but they soon quiet down and usually remain calm during the operation.

In all cases the ether method of sterilization of cocain and eucain has been employed.

A short-beveled needle having a steel point, the remainder of the needle down to the shank constructed of a soft metal, has been used in order to avoid the possible danger of breaking should the patient struggle.

He has given, what seemed at the time, large doses of cocain, but in only one instance have any alarming symptoms occurred. In this case it was impossible to say whether the injection was the cause, or the disease from which the patient was suffering. Usually the increase in the drug has resulted in a more satisfactory analgesia and fewer after-effects.

PICRIC ACID AS A LOCAL REMEDY IN AFFECTIONS OF THE SKIN.

During the last two or three years many writers have testified to the value of picric acid as an antiseptic, sedative and keraptoplastic agent in various inflammatory affections of the skin. It has proved especially valuable in superficial burns, acute eczema and herpes zoster. The strength of the solution employed is usually 1 per cent. Compresses are wrung out of this, applied to the part, covered with a thick layer of cotton and retained by a gauze bandage. Redressing is not necessary for two or three days. For a few minutes there is some smarting but this soon gives way to a sense of relief. The advantages claimed for this treatment in burns are simplicity, painlessness, rapidity of healing, minimum of suppuration and a smoother cicatrix than is obtained by other methods. It should not be employed in old, deep or suppurating burns. Like certain other local remedies, picric acid seems capable in some instances of causing a generalized cutaneous eruption, as in a case reported by Achard and Clare (*Gaz. Hebd. de Med. et de Chirurg.*, October 11, 1900) in which the application of the acid to a small burn on the face induced a universal scarlatiniform and vesicular eruption with edema and well-marked eosinophilia.—*American Medicine.*

PEDIATRICS

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Vol. XII. DECEMBER 15th, 1901. No. 12.

EDITORIAL COMMENTS

The Tuberculin Test

In a very practical article on this subject in the *Medical News* for October 12. 1901, Dr. W.E. Casselberry, of Chicago, reports nine cases in adults in which he has employed this method to clear up an otherwise doubtful diagnosis. We cannot do better than quote extensively from his very able article:

"One meets with no inconsiderable number of patients in whom it seems of paramount importance to exclude positively tuberculosis. It is conceded that to this end, in the majority of cases, a consideration of the symptoms and of the physical condition is entirely adequate, yet in an appreciable minority this evidence because of its scantiness and of possible variations in its interpretation is not conclusive, and conversely the typical, steadily-progressive case of pulmonary tuberculosis may be gauged by a tyro, while the atypical case by reason of minuteness of foci of infection, diminished virulence, increased resistance, favorable environment, latency, fibroid inclusion, arrest, or confusion with other pathogenic infections, may leave an uncertainty in the mind of the expert.

"There is a prebacillary stage, in the sense that the sputum examination may be negative without disproving the existence of tuberculous infiltration. Confusion arises between the normal relative dulness and harsher respiratory murmur of the right infraclavicula, region and the slightest signs of initial tuberculosis at the apex. The temperature when other symptoms are obscure is not always decisive and would best be observed over a period of weeks, even months, if one would attach to it a positively diagnostic import. Subacute inflammatory attacks in the upper respiratory tract, influenza and its after-effects, empyema of the nasal accessory sinuses, prolonged convalescence from acute pleuritis or pneumonia, and the primary and secondary stages of syphilis are the conditions which I have in mind as simulating for a time the unpronounced tuberculous febrile reaction. This is especially true when these affections occur in individuals of relatively light weight, deficient nutrition, sedentary life, poor thoracic development and adverse hereditary tendencies. And then there are prefebrile, interfebrile and postfebrile periods in which the tuberculosis, supposedly for the moment in a state of inactivity, fails to register above 99° or 99.5° F., which does not exceed an occasional maximum normal. There are persons in varied states of simply impaired health or in the midst of an exhaustion incidental to a strenuous life whose afternoon temperatures reach that point.

"So also with the rapidity of the pulse. When there is progressive activity of the infective process the resulting toxemia quickens the heart, but in intermediate periods and in latent tuberculosis the pulse-rate may not rise above 80. Stress has been laid upon the inalterability of the rapid pulse-rate by position and the characteristic sphygmographic tracings, but one would expect these also to vary in accordance with the degree of activity, as does the rate itself. Attention is also called to the fact that the arterial pressure in tuberculosis is low, as it is in other forms of anemia, but that blood examinations, with special reference to the low specific gravity of chlorosis, while not an unerring guide, may aid in differentiating the anemias.

"Therefore, while it is not contended that the fallacies herewith enumerated are of very frequent interposition and while it is admitted, even urged, that the conclusiveness of the customary methods of examination can be broadened by superior skilfulness and a keen appreciation of certain of the finer phases, such as skodaic tympanitic apical resonance, a heightened pitch of the prolonged expiratory murmur, the relation of height to thoracic perimeter, Roentgen-ray photography, etc.; nevertheless it happens from time to time that cases present themselves in which it is impossible to assert the presence or absence of pulmonary tuberculosis despite a conscientious resort to all of these means, and in them it would seem that the careful injection of tuberculin as a test is both justifiable and decisive. I say justifiable because notwithstanding the commendations of all who have recorded a practical use of the test, including B. Fraenkel, Trudeau, Beck, A.C. Klebs, Otis, G. W. Webster, Whittaker, Anders, and numerous others, there is still an aversion to the deliberate injection of the organic toxins of a pathogenic organism, such as the tubercle bacillus, an aversion which by laymen is based upon the mere uncanniness of the idea and by physicians upon the double apprehension that tuberculin may carry virulent tubercle bacilli and that its injection may generalize or re-excite a previously circumscribed quiescent tuberculous deposit.

"These apprehensions have been definitely answered anew by B. Fraenkel, who affirms that the tuberculin of Koch is heated in a warm bath to a consistency of one-fifth its volume and then filtered, that therefore it can contain no living thing. The fear of generalization and re-excitation he ascribes solely to the observation that during the early use of tuberculin as a cure dissolution was apparently hastened in certain advanced fever-stricken cases, but now, by reason of the many thousands of test doses which have been given without detriment, he holds it proven that the careful application of the tuberculin test can result in no harm. * * * *

"Is the tuberculin test always decisive? If one were compelled to answer by an unqualified "yes" or "no." it must be admitted that there are variable factors, such as special susceptibilty, exceptional resistance, habituation to toxins, and even a close similarity of other pathologic processes to tuberculosis, which are capable of precluding absolute accuracy or results. Since Koch's description of a typical reaction in himself by an injection of .25 is known to be merely a matter of sufficiently large dose to cause any person, either normal, indifferently ill, or tuberculous, to exhibit a characteristic general reaction. In the non-tuberculous as a rule the dose must considerably exceed .01, while the special affinity of tuberculin for tuberculous tissue causes a reaction to be elicited by a dose under .01, usually .005 or less. It is conceivable that in exceptional instances a natural supersensitiveness toward tuberculin might be found just as certain persons are extraordinarily impressionable to cocaine, turpentine, quinine, etc.; but, while such a heightened susceptibility might underlie a very small percentage of errors it cannot be made to account for 8 or 9 per cent. of reactions, said to have been produced in healthy persons. The most reasonable explanation of this large discrepancy lies in the recollection that autopsies disclose previously unsuspected foci of tuberculosis in even a larger proportion and that the bulk of the 8 or 9 per cent., therefore, were probably tuberculous. Practically heightened susceptibility is less apt to vitiate the results, for the reason that the test with reference to pulmonary and laryngeal conditions is needed only when it is a question of incipient, latent or unpronounced tuberculosis in which the patient, not being habituated to large quantities of the toxin already generated in the body, reacts to quite small test doses. For the same reason it is readily appreciated that in advanced tuberculous toxemia reactions are excited only by large doses, with correspondingly lessened safety and dubious results. In such cases the test is not commended and should be but rarely required."

ORIGINAL ARTICLES

THE EARLY CARE OF THE DEAF AND DUMB.

By W. B. Drummond, M.B., C.M., M.R.C.P.E.,
Edinburgh,
Physician to the Western Dispensary, etc.

THE training of defective children is one of the most difficult branches of the art of education. Necessarily it rests practically entirely in the hands of specialists, and for this reason any knowledge of the particular needs of the different classes of the defectives is apt to be considered superfluous by the general practitioner. True it is that the early care of such children is, to a considerable extent, in the hands of the family doctor; but if he is able to diagnose the existence and nature of bodily or mental defects which indicate that the infant will not pass through the normal course of intellectual evolution, what more can he do, beyond, perhaps, when the time comes, advising as to a suitable school?

Now, if the education of such infants could be taken in hand by trained teachers as soon as this misfortune was recognized, the family physician might very gladly shift his responsibility at once to shoulders more able to bear it. But the great majority of defective children—all, indeed, except the children of a few wealthy parents who make special provision for their offspring—have to wait until they are old enough to go to school before they receive any training directly adapted to their needs. This means that during the first five or six years, perhaps the first seven or eight years, of their lives much precious time and many golden opportunities are lost, and they arrive at school in a much more backward condition than they would if their early years had been harvested aright.

Two years ago the writer showed in this journal* how much could be done for blind children, by judicious home training, to fit them for subsequent school work. It was shown that such children when they come to school, after the usual kind of home treatment, are frequently defective in more ways than the want of sight. They are often very feeble bodily because they have never been allowed to romp around like other children for fear of bumps and tumbles; they are feeble mentally because it has seemed unnecessary to provide them with the toys and occupations, or to encourage the games, which are such potent mental stimuli to the young child; they frequently indulge in bad habits because, in conpensation of their failing, they have been uncorrected and over-indulged. How all these defects may be prevented by suitable early training was described in detail, the method being summed up in the words: The blind child should, as far as possible, be treated exactly as if it were able to see.

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* The Early Training of Blind Children. Pediatrics, June, 1899.

If the statements of the above article are to be relied on it is obvious that one class of defective children at least are able to reap much benefit from judicious advice as to training before they are old enough for school. Perhaps it may be of some interest to compare the lot of the deaf and dumb with that of the blind; to ask whether they also suffer from mistaken kindness or unintentional neglect, and to inquire whether anything can be done to assist them in advance for the coming of their school days.

In the first place, let us consider the nature of the defect from which the deaf-mute suffers. It must be unnecessary in a medical periodical to insist upon the fact that the particular "want" of the deaf-mute is the sense of hearing. The non-development of speech is secondary to the deafness. There is no abnormality of the organs of speech, nor any congenital deficiency of the speech centers in the brain.

These facts are sufficiently well recognized. The next point to be referred to I desire to emphasize more strongly, because it is far from being sufficiently recognized and indeed is not at first sight very obvious. This is that deaf-mutism is a very much more serious misfortune than blindness. This statement requires a little explanation, because it is one which most people would, I imagine, be inclined to question if they had not considered the matter. Those of us who are happily in possession of all our senses feel that to us the loss of sight would be a much more serious deprivation than the loss of hearing, and the "poor blind man" excites our pity to a much greater degree than his deaf brother. A little consideration, however, will show that it is not fair to compare the loss of sight or hearing in adult life with a similar loss arising congenitally or sustained in early infancy. If we were now to lose our hearing we would be much hampered in our converse with our friends, the enjoyment of music would be denied to us, our business would be seriously interfered with. In some such way we would measure our misfortune. The extent of our loss would be the measure of our calamity. But note this, if we had lost the power of hearing we would still retain all that has come to us through the sense of hearing. We would still retain the benefit of our education. Art and literature would still afford us endless pleasure. But the enjoyment of art and literature depend upon an education, to which we are indebted in a large measure to the sense of hearing.

Again, were blindness to fall upon us, how would we measure our misfortune. Surely, once more, by the extent of our loss. Loss of independence and self-reliance, loss of the enjoyment of beautiful scenery, even the homlier pleasure in shifting scenes, loss of pictures, loss of books, loss of all that the eye holds dear—who can compare mere loss of hearing with such a loss as this?

Consider now the case of the child. How can his misfortune be measured? Not, certainly, by the extent of his loss, for one cannot love what one has never possessed. Some other standard of measurement must therefore be looked for, and I think we may find this in the extent to which the absence of any particular sense interferes with intellectual development. Regarded in this light it is evident that the deaf-mute is at a serious disadvantage even compared with the blind. Man's intellectual development is dependent largely in its lower, entirely in its higher shapes, on the acquisition of speech. The blind child picks up speech from those about him in the same way as normal children, and as he passes through the chatterbox stage he acquires the usual childish stock of variable information. When he is sent to school his knowledge is already considerable, so that he can understand the directions given to him or ask about almost anything that puzzles him.

The deaf-mute is quite unable to pick up language for himself in this natural way. When he comes to school he may be able to indicate his immediate wants by the use of the significant gestures which all deaf children either invent or learn by imitation; but apart from this, speech is wholly lacking. The only speech which he will ever acquire is that which is given him by civil instruction. Deaf-mutes are naturally very observant and very imitative, and it is easy enough to teach them any number of arbitrary signs. The real difficulty in educating them is to insure their understanding of the meaning of the signs they learn. This difficulty is well illustrated by the mistake in which the Abbé l' Epée fell in his method of instruction. He succeeded in associating gestures with words to such an extent that he was able to dictate whole pages to his pupils, who correctly transmitted in words what he had indicated by signs. This success brought his method for a time into great notoriety, until it was learned that his puplls had merely learned to associate the gesture symbol with the written symbol, and that neither conveyed any meaning to their minds. They could indeed write from dictation but they had acquired no knowledge of language and could not form a single sentence for themselves.

The methods now in use for instructing the deaf and dumb are two:

1. The sign language and manual alphabet.
2. The method of articulation and lip reading.

It would be beyond the purpose of the present paper to enter upon any discussion of these methods or of their comparative advantages. Both aim at giving the pupils language. So long as this consists in teaching the symbols (lip symbols, manual symbols, written or printed symbols) which stand for definite things which can be shown, the course is clear enough, but when one begins to attempt to teach qualities or abstractions, or the use of other parts of speech than substantives, or the formation of sentences, the difficulties become enormous; and when the pupil begins to read he will constantly be stopped by colloquialisms, or similes, or the use of familiar words in some unfamiliar way. These difficulties are so great that it is quite exceptional for the deaf and dumb ever to read with such facility as to find pleasure in it, hence they remain shut up throughout life within a very narrow circle of ideas and interests. To give a single example of the kind of difficulties met with, take the word SAW. This word, written or printed, may be readily associated in the pupil's mind with a carpenter's saw, by showing him one and then pointing to the word. Now suppose the pupil reads in his primer, "He saw tree," what will the sentence mean to him? If he imagines the man sawed the tree how are we to explain the correct interpretation to him. Perhaps his misunderstanding may not be discovered until we find him puzzling over, "The man saw a boy." Then when such difficulties have been surmounted, think of such a phrase as "Full of wise saws and modern instances." Even in the simplest story-books the deaf-mute finds himself constantly stumped in this way.

Perhaps I have now said enough to show that deaf-mutism is a more serious barrier to intellectual development than blindness and therefore in this sense a more serious calamity. There is, however, one marked advantage which the deaf-mute has over the blind, and that is the facility with which he can learn manual occupations, and the number of trades which are open to him.

Now let us take up the question of the kind of training which a little deaf and dumb child should receive before he is old enough to go to school.

The first point to attend to is that the child should be treated just like any normal child. This will naturally be done in infancy, because the child's misfortune is not usually noticed early, and it is often two years and occasionally even three years before the parents discover that anything is wrong. In short, it is only when the child fails to learn to talk that the possibility of deafness is suspected, and the child's hearing tested. After it is known that the child is a deaf-mute the home training should continue as before. The parents should be instructed not to cease to talk to the child, but, on the contrary, to continue to do so and to encourage the child to watch their lips as well as their gestures. There can be no doubt that the acquisition of speech by a normal child is greatly facilitated by the fact that his mother and nurse talk to him daily for months before he can understand a single word. So in the case of the deaf-mute, some idea of the means by which other people communicate with one another may be formed if he is accustomed to watch the lips of the persons talking, to feel with his hand the current of air issuing from the mouth as they talk and the coincident vibrations of the larynx. In addition to this, common objects should be indicated and their names repeatedly pronounced so that he may have practice in watching the movements of speech, and perhaps take one or two steps in the direction of interpretation. It is true that very little obvious result can be expected from such tuition by untrained teachers before the child is old enough to go to school, but such ideas as the child is able to gather will facilitate the subsequent teaching in school. This kind of teaching should be carried on without reference to whether the oral method is made use of in the school to which the patient will go or not. Whether it is worth while making any attempt to teach the child to use his own voice (a much more difficult matter) will depend very much upon the intelligence of his parents and the amount of time and trouble they are able to give to such instruction.

There is, however, still another way in which a few steps may be taken in language acquisition. This is by fixing the common objects labels having their names in printed characters. In this way an association will be formed between the printed symbol and the object. When the child has acquired some familiarity with a few common names he may be shown pictures of the same objects with the names printed beneath them. Lastly he should be shown the names alone and asked to point out the objects. Such teaching does not, of course, presuppose any knowledge of the alphabet. Each word is simply regarded by the child as a symbol standing for the object, much as a rough sketch would be. In these ways, then, the child may gain some ideas, very rudimentary it is true, of language, and these may assist him to fall in with the school instruction more quickly than he otherwise would.

There is not the same temptation to do everything for the deaf-mute as there is for the blind. Yet the parents should be instructed to encourage the child in every possible way to do things for himself and to learn in this way habits of self-reliance. He should, of course, be taught to dress, and wash, and feed himself. He should be supplied with toys which afford practice in the use of his hands. All kinds of occupations which are suitable for little children, such as those of the kindergarten, are of distinct value. When he is sufficiently far advanced, spelling bricks and such other toys as afford practice in such language as he has acquired are of the greatest service.

The *outré* habits, which are not uncommon among the blind, are not apt to be acquired by deaf-mutes. Being observant and imitative the latter quickly learn the habits of those among whom they live. Their most marked failing, in popular estimation at least, is a tendency to irritability and bad-temper, and loss of self-control on very slight provocation. If it cannot be denied that there are some grounds for this charge, it may safely be asserted that the greater part of the blame must lie at the door of faulty training. The proper treatment of the "rages" to which young children are so frequently prone is often difficult, and many of the popular remedies are scarcely applicable to the deaf-mute. Music loses its charms to soothe; the soft answer which falls on deaf ears will turn away no wrath; the good-humored chaff which would chase away the frown with a smile can find no door of entrance. Again, the deaf-mute's attention can be less readily diverted from his wrongs by suggesting other thoughts, and imaginary slights can be less easily explained. All the more necessary is it then that the child's guardians should realize the liability to bad temper and minimize as far as possible occasions for stumbling, Intercourse and play with other children should be encouraged as much as possible, and any quarrels should be settled with strict impartiality. While the normal children should be taught to make allowances for the deaf-mute's infirmity and should not be permitted to bully him or take advantage of him in any way, it is not wise to teach them always to give in to him. He should be taught, like other children, to give as well as to take. While over-indulgence is to be avoided on the one hand, on the other care must be taken that he is not discouraged by the greater quickness of normal children and encouragement should be given him to persevere with whatever he undertakes.

A man was severely injured by being dragged for a considerable distance by a trolley car. On making an examination, the ambulance surgeon of Bellevue Hospital expressed the opinion that because the pupil of the right eye was somewhat more dilated than that of the left, there was concussion of the brain present. "O, doctor," said the patient, "you needn't mind the appearance of that eye. It's a glass one."—*Atlanta Journal-Record.*

SCARLATINAL NEPHRITIS AND ITS TREATMENT.

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THE frequent occurrence of nephritis as a complication of scarlet fever and the grave character of the symptoms present in many cases certainly justify a discussion of the phenomena and a consideration of some of the more important features in the treatment.

In some years not more than 5 per cent. are affected, in others, on the contrary, nearly one-half of the patients show the characteristic changes in the urine.

During the first week, particularly at the height of the eruption, but with the temperature considerably elevated, the urine is scanty, high-colored, and traces of albumin appear. The latter, the result of the cloudy swelling of the renal epithelium, is transient and not important. During the period of desquamation in the second or third week and sometimes later, the urine contains albumin and casts, a genuine nephritis having developed. The condition differs from that described in the first instance. The onset may be insidious indeed; it may be so gradual and mild that it is frequently overlooked; the urine is examined as a routine plan. No matter how mild the course of the eruption the routine examination of the urine must not be neglected. Not infrequently the mildest cases of scarlet fever are followed by severe and even fatal renal troubles.

In other cases the nausea, anemia, headache, apathy, with or without slight edema of the face and extremities, direct attention to the kidneys. The urine is diminished and contains an excess of urates; at times it is smoky, more or less bloody in appearance or no special change in color is noticed.

In mild cases serious symptoms may arise at any time. Not infrequently during epidemics edema of the face and limbs with marked anemia may be present without any evidence (chemical or otherwise) of nephritis. The trouble then is due to the failure of the circulation attending the weakness of the heart, the result of more or less severe myocarditis.

In bad cases the symptoms come on suddenly or they may have been preceded for a short period by vomiting, headache, etc. Small quantities of dark and bloody urine are excreted or suppression may exist. Vomiting, convulsions and coma may lead to a fatal termination in consequence of the acute uremia.

Ordinarily the condition manifests itself in from ten to twenty days after the period of desquamation; Jacobi has observed its occurrence as late as the thirty-seventh and fifty-second day. Cephalagia, more or less intense, is a common symptom. Disturbances of respiration, great dyspnea, with or without bronchopneumonia, edema of the lungs or evident thoracic complications are of frequent occurrence and must be looked upon as uremic in origin.

Vision may be defective, either functionally or due to anatomical changes in the deeper structures of the eye. The blindness is usually temporary in character.

With the edema of the body generally, local effusions into the serous sacs (pleural, peritoneal, etc.) may occur. Endo- or pericardial complications may arise. Frequently the original throat and eruptive symptoms have been mild or possibly overlooked, and attention is not directed to the patient until edema, pallor, persistent vomiting or other uremic manifestations lead to an examination of the urine. An inspection of the hands and feet will reveal more or less pronounced desquamation, thereby clearing up the etiology.

In some cases an early manifestation of uremia is noticed in the change in the temper or disposition of the child, irritability may show itself, extreme restlessness occurs or the patient may be frightened, alarmed or greatly depressed. Fever is common; edema of the feet, face and body generally may or may not be present. Now and then, particularly when the patient is kept in bed, edema of the scrotum or back first directs attention to the kidneys.

In the treatment of scarlet fever cases the parents should be given to understand that the physician's duties are not terminated when the rash disappears, the temperature subsides, and throat, glandular or ear troubles have been relieved. During the stage of desquamation the great danger is that of a complicating nephritis.

As a routine plan the urine ought to be examined daily. Rest in bed should be insisted upon, particularly in mild cases.

An even temperature (not over 72°) should be maintained whenever possible; flannels, light or medium, should be worn according to the season; a fluid diet kept up and water given at regular intervals.

The failure to observe proper precautions is due in some cases to neglect or ignorance, in other instances mild cases are apt to be regarded as "scarlet rash," so called, and therefore supposed to be free from the danger of kidney lesions.

If the case be seen at the beginning, with scanty and high-colored urine, plain or carbonated water, with or without small quantities of bitartrate of potash or other saline given at frequent intervals in small amounts will soon increase the flow and abort the trouble.

The morbid substances circulating in the blood may be eliminated through the kidneys, the skin or the intestinal tract. It should not be forgotten that there is a marked antagonism between the functions of the skin, the bowels and the kidneys; great activity on the part of one, lessens the secretions by the others. Too often this is forgotten, and prolonged sweating, brisk purging, etc., are practised at one and the same time; of course the result is disappointment.

In the acute inflammatory condition of the kidney, the result of the toxins of scarlet fever, with or without edema, the organs are engorged with blood and the tension in the vessels is increased; under such circumstances no direct irritant to the renal tissues should be administered. The indication is to relieve the engorged capillary vessels of the glomeruli, to restore the renal secretion without adding to the congestion. This can be accomplished in a physiological way. The flow is best favored by a liberal use of water, with or without cream of tartar or the vegetable salts of potash. The latter are very apt to upset the stomach; if so they must be discontiuued.

It is contended that the fibrinous plugs filling the tubules are dissolved by alkaline urine. For this reason the use of the vegetable salts of potassium is favored by many. As a matter of personal experience, water in the beginning seems to act best; later on salines may be added. If the oliguria be pronounced or uremia threatening a normal salt solution, temperature 105° to 110°, may be introduced high up in the rectum through a colon tube (enteroclysis). The water will be absorbed, the vasomotor constriction is lessened, the toxines are diluted and their expulsion is favored by the increased elimination of fluids through the natural channels.

Many favor the subcutaneous use of water by the method of hypodermoclysis. With this the writer has but little practical experience. He has seen cases in convulsions, in coma, etc., do well by giving water in small and frequent doses per mouth with or without colonic flushings.

Digitalis is frequently employed. Aside from its irritant effects upon the stomach its use is contraindicated, as one of its alkaloids (digitoxin) is a decided irritant to the kidneys.

Furthermore digitalis increases the force of the pulse while it diminishes its frequency; at the same time the vessels are contracted. In scarlet fever the heart muscles are weakened, the blood tension is increased and the renal vessels are already engorged; digitalis, consequently, ought not to be employed in the acute cases,

Calomel in fractional doses (gr. 1-20 to gr. 1-10) every hour serves a useful purpose. It acts as a sedative to the stomach, is diuretic, has a laxative effect and finally reduces the arterial tension. It may be continued for days and days; only exceptionally is its use followed by stomatitis. The existence of a prior ulceration or follicular stomatitis is of course a contraindication to its employment.

The aluminum carbonate in small, repeated doses is useful in cases of severe dyspnea or threatened pulmonary edema, provided the stomach is not irritable. Dry-cupping of the chest may be employed at the same time. Strychnine is an excellent heart tonic in these cases and may be given subcutaneously or per mouth. Later on the anemia requires iron, either the tr. fr. chlor. or syr. fer. iodid in proper doses. The unpleasant taste of the latter is best covered by the syr. rub. idaei.

If convulsions occur hot-packs, chloral per rectum and salt water irrigations are to be employed.

Water may be administered in small quantities per mouth in addition to the saline solution per rectum. In coma the subcutaneous use of sodium caffeine benzoate in good doses braces up the heart, arouses the patient from the stupor and sets up diuresis.

Uremic blindness, whether functional in character or due to retinal inflammation, disappears as the nephritis subsides. Renal hemorrhages are best treated by hot applications over the loins, mustard plasters and absolute rest. Gallic acid is advised, but its taste is objectionable. Suprarenal extract or its alkaloid, adrenaline, might be tried.

Hydrothorax and empyema require appropriate treatment. It is surprising how quickly the amount of urine increases when the intrathoracic pressure is relieved. The anorexia incidental to the disease and the nausea due to the renal lesion makes the question of nutrition one of difficulty. Only small qnantities of liquid food at frequent intervals are to be allowed. Broths, clear soups, equal parts of milk and oatmeal water in ʒi doses may be tried and the quantity increased as the digestion improves.

Though aware of the fact that alcohol is contraindicated in nephritis in bad cases with frequent vomiting and dry tongues, etc., ʒi doses of cold champagne and ice given every ten to thirty minutes have tided the patient over the danger point.

Hot packs or hot air baths may be advantageously used when the edema is marked, the dyspnea excessive, or pulmonary edema is impending or present.

To recapitulate, as the danger of nephritis is greater during the stage of desquamation, the patient ought to be kept under medical observation for at least three or four weeks. The urine must be examined daily or at least every other day during this period. The routine treatment consists in rest, fluid diet (milk diluted with lime-water, oatmeal water, etc., broths and clear soups). Water in small quaatities at regular intervals, with or without salines, should be given. The temperature of the room should be about 72° when possible. Flannels should be worn; in mild cases the above will be sufficient with the addition of fractional doses of calomel four times daily.

If severe headache, nausea and vomiting be present small doses of calomel may be given hourly. Liquid must be given in ʒi doses every five to fifteen minutes until stomach can take more. Coma or convulsions require energetic treatment, as hot-packs, high saline injections, brisk purging, oxygen, caffeine subcutaneously, and the like. Even in coma and when the convulsions have ceased, ʒi doses of water should be given at frequent intervals. The other uremic manifestations yield readily to methods described above. Though the symptoms are frequently alarming, yet if judiciously treated, the tendency is to recovery.

Desperate cases frequently recover. Patients with repeated convulsions or suppression or who by actual measurement may not secrete more than 1 or 2 ounces per day and in whom coma has persisted for twenty-four to thirty-six hours, have been saved despite the unpromising character and apparently fatal prognosis.

A word as to the management of the stage of convalescence. As long as albumin appears in the urine the patient ought to be kept in bed, or, if intractable, at least be confined to the house, in an even temperature, avoiding exposure or a display of too great muscular activity.

The anemia must be combatted by means of light nutrition, food and iron internally. The functions of the bowels may be regulated by the use of salines or calomel.

The myocardial weakness is to be treated by rest and strychnine in appropriate doses.

The diet allowed must be easily digested and light in character.

Plenty of water, a moderate amount of lemonade or carbo-water may be given.

A failure to observe such necessary precautions in this stage is largely responsible for many a chronic nephritis in later years.

ADMINISTRATION OF OLEUM MORRHUÆ TO CHILDREN.

Sheffield suggests the following as a palatable form of administering oleum morrhuæ to children:

℞	Olei morrhuæ	℥ii
	Ext. malt	℥ss
	Syr. calcii hypophos	℥ss
	Glycerini	ʒii
	Pulv. acaciæ	ʒii
	Ax. cinnamomi q.s. ad	℥iv

M. Sig.—One to two teaspoonfuls after each meal.—*Med. Review of Reviews.*

SPECIAL CLINICAL DEMONSTRATION AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

By A. Caillé, M. D.

CASES:— I. Tuberculous Peritonitis (in a child four years old).
II. Hemophilia (in a girl four years old).
III. Resorcin Poisoning in an infant five days old.
IV. Prolapse of the Rectum in a child two years old.
V. Intubation.

Tuberculous Peritonitis.

The patient on the table is a girl, 4 years old, who gives a history of abdominal pain, occasional diarrhea and progressive emaciation, as elicited from the mother. A careful examination shows that the lungs, the heart and the kidneys are free; the spleen and liver are materially enlarged; the urine does not contain albumin, sugar or bile. The abdomen is distended and tense, and dull on percussion from the umbilicus downward; this dullness is not due to a well-filled bladder because we have previously introduced a catheter from which only a few ounces of urine have escaped. As we palpate and massage the abdomen we hear and feel a gurgling; the fluid is evidently not free because the percussion dullness does not change with the altered position of the child. The fluid is contained in the interstices of the intestine, which are probably matted together and bound down by adhesions. From the above signs and symptoms we may venture to diagnose tuberculous peritonitis, an exploratory puncture in this case is unnecessary and might be dangerous. In tuberculous peritonitis opening of the abdomen, as a rule, is followed by a disappearance of the tuberculous deposits on the peritoneum, as shown by certain cases in which the abdomen has been opened for some reason or other for the second time. The diagnosis of tuberculous peritonitis is based upon the abdominal symptoms, such as distention, pain, disturbed bowel action, presence of fluid, loss of weight and is made by exclusion except in those cases in which the tubercle bacilli are found and then the diagnosis is positive. I have noted a rise of temperature of an irregular type in all cases which have come under my observation. There is nothing characteristic, however, about the temperature curve. Cases of chronic non-tuberculous serous peritonitis present usually the evidence of an ordinary ascites, the abdominal fluid being free, whereas it is usually not free in the tuberculous variety. It is rare to find the tubercle bacilli by microscopic examination of puncture-fluid. In all doubtful cases the opening of the abdomen is indicated and will do no harm. In the absence of chronic appendicitis or abdominal fluid the paroxysmal pain in the abdomen in children is frequently due to worms, intestinal indigestion, membranous enteritis, and may be overcome by dieting and attention to the irrigation of the bowels.

To the three varieties of tuberculous peritonitis which have been hitherto formulated by various observers: Chronic tuberculous ascites (miliary form); 2, fibro-caseous tuberculous peritonitis; and 3, fibro-adhesive tuberculous peritonitis, must be classed a fourth variety—tuberculous peritoneal tumors, of which latter variety I have seen two cases within the year. The infection of the peritoneum can come about by way of the circulation or from the gastro-enteric or genito-urinary tract, and it is not too far-fetched to assume that milk and meat of tuberculous animals may be a source of infection, although Koch, according to his recent utterances, is skeptical on this point.

From personal experience I am willing to state that medicinal treatment of tuberculous peritonitis is extremely unsatisfactory, and when some form of medication is followed by improvement or cure one must not forget that spontaneous cures have also been reported and observed in cases presenting all the clinical evidences of the disease. Finally, the indication is early operation, which is, no doubt, a very great benefit to the patient when the tuberculous process is limited to the peritoneum.

As regards the establishment of a complete cure, I am somewhat skeptical because of the presence of mild abdominal symptoms or irritative catarrh or inflammation in bronchi, lungs and pleura and intestines in a number of cases which remained under my observation two years after the operation.

If at the time of operation we have coexisting tuberculosis of the lung or pleura the ultimate results are unsatisfactory, although some improvement takes place for the time being.

Hemophilia.

(In a girl 4 years old).

The child before you was brought to the babies' wards in an almost exsanguinated condition. The history given by the mother is as follows: All her children are "bleeders." Five days ago this child fell while holding a stick in her mouth and received a punctured wound in the roof of the mouth from which blood has been oozing for the past five days, despite the efforts of various physicians to check the hemorrhage. Most of the blood had been swallowed and for some days the stools were "tarry" in consequence. On admission to our hospital the child was placed in a good light and the mouth thoroughly cleansed of blood and coagula; the bleeding spot was easily found and compressed by means of the finger with a pledget of cotton saturated in stypticin; 1 gr. of stypticin was also given hypodermatically every hour for four hours, with no result as far as the bleeding was concerned. The hemorrhage was finally checked by means of the actual cautery (Paquelin).

In other similar cases we have succeeded in checking hemorrhage with alum solution or a 10 per cent. antipyrin solution or the adrenal solution. Some surgeons are in the habit of giving 5 to 10 grains of chloride of calcium internally three times a day before operating on the patient with hemorrhagic diathesis or hemorrhagic tendencies; for instance, for patients who are to be operated upon for gall-stones and who have been cholemic for some time; for it is a notorious fact that in such patients the blood shows little tendency to coagulate, thus in the hemorrhagic diathesis there is evidently a lack of blood coagulating power; further than this we know nothing definite concerning this condition. In the new-born, hemorrhage from the stomach, intestines and from the navel are occasionally met with and should be managed on the above lines. In navel hemorrhage transfixation of the stump is generally possible and frequently effective.

In hemorrhage from the intestine in the new-born infant a speculum should be introduced and the intestine irrigated and cleansed with the hope of finding and controlling the bleeding spot. Usually the hemorrhage takes its origin high up in the gut and is not accessible from the anus. When the hemorrhage has been excessive the heart's action is usually rapid but the pulse cannot be felt and the saline infusion may be indicated. I know of no recoveries of new-born children after they have lost a pint or more of blood.

Resorcin Poisoning.

In an infant 5 days old.

The infant before you is a week old, and developed a dyspeptic diarrhea a few days after birth, probably from overfeeding at the breast. Instead of cutting off the breast-milk for a short time and feeding on farinaceous water, in order to give nature a chance to readjust itself, the infant was at once drugged according to the prevailing fashion, and calomel, lactopeptone, bismuth and salol were given in rotation. As there was no improvement, resorcin was ordered in ¼ grain doses every four hours and after the sixth dose of this drug the child became cyanotic, pulseless, cold and clammy, and the urine, which had been voided before collapse set in, was smoky in color. From the foregoing history and symptoms resorcin poisoning was at once suspected and the subsequent management was as follows: The child was given a hot bath (110° F.) every two hours and kept warm by hot water packs, the bowels were flushed with a very warm saline solution every three hours, and warm, sweetened tea was given by spoon frequently. As soon as the child was out of its collapse it was put to the breast and in the course of a few days its recovery was complete.

Prolapse of the Rectum

In a child 2 years old.

The mother states that this patient had been constipated for some time and that the rectum prolapses eight or ten times a day accompanied by a profuse discharge of mucus. In a case of this kind we should at once examine the gut with the finger and look for some local irritation, such as rectal polypus and even stone in the bladder. In the case before us we can simply make out a relaxed sphincter and for the present we will order rectal irrigations of cold water three times each day and we will adjust the diet with the hope of overcoming constipation, and should this management fail, we will make linear cauterization of the prolapsed gut by means of the Paquelin cautery.

Intubation on the Cadaver.

The colleagues are now privileged to withdraw and continue their practice of intubation on the cadaver. You will find two sets of instruments—the original O'Dwyer and the "improved" set,—which latter I do not recommend for the following reasons:

The narrowest part of a child's larynx is at the height of the cricoid cartilage. In introducing a tube into the larynx great care must be taken not to injure the tissues at this point. For this reason the O'Dwyer tubes are blunt. The so-called "improved tubes" have a spear-like end and are, in my opinion, not safe.

Injury to the larynx means cicatricial chronic stenosis. The "retained tube" cases, as they are called in practice, are very difficult to manage or cure. Breathing is impossible without the tube and the latter will have to be worn for a long time or indefinitely.

All intubation tubes should have a coating of hard-rubber—metal tubes if worn for a few days often show an incrustation or roughening which may produce an abrasion of the mucous membrane and may also result in a chronic stenosis of the narrow air passage.

The curettage of the uterus is by far a more dangerous operation than abdominal section, and I think the consensus of gentlemen who have a large hospital experience will be that more women are crippled for life by the use of the curet, dull or sharp, in the hands of the incompetent general practitioner or a gynecologist in embryo, than any other procedure in surgery. I have removed not less than thirteen uteruses subsequent to incompetent curettage."—Sherwood Dunn, *Internat. Jour. of Surgery.* Note in *Milwaukee Med. Jour.*

THE RELATIVE IMPORTANCE OF DISEASE OF THE HEART MUSCLE AND THE HEART VALVES.

By Louis Faugeres Bishop, A.M., M.D.,
New York.

ONE of the chief advantages gained by the extension of one's experience is the appreciation of the relative importance of pathological conditions. On approaching any subject that is most interesting and seems most important, it is often found that the most prominent features produce the smallest results, while underlying conditions that are only detected by careful study and observation are the ones that control the future. Thus the loud murmur may be of little importance compared to the commencing disease of the heart muscle, detected by the slight alteration of rhythm and small variations of force of the heart-beat. In the same way the size of the heart determined only by careful examination and difficult induction is of relatively enormous significance as compared with the blowing systolic murmur that is so easily heard. There is no condition that requires more careful diagnosis than disease of the heart muscle, for it is easy to mistake functional disorder for the symptoms of serious disease.

A fact that cannot be too much emphasized is that cardiac disease is a good deal more than a simple mechanical disturbance of the valvular segments. The man who in these days would make it a practice to give digitalis in a routine way to every case that presented a murmur would indeed be a poor exponent of the modern art of medicine. Furthermore observation in the light of post-mortem findings more and more goes to show that murmurs are not by any means as frequently traceable to deformity of the valvular segments as one might believe. We have all of us had the experience of debating with our colleagues the location of particular murmurs to find that at the autopsy the valvular segments were all intact. Particularly was this the case in a woman who was admitted to the hospital with general anasarca and who had such loud murmurs, both at the base and apex, that the conclusion was almost inevitable that endocarditis was at least a large element in the case. However, the autopsy revealed simply a dilated heart.

Certain forms of dilatation of the heart involve dilatation of the orifices, which allows a separation of the valve segments producing murmurs that are very loud. Perhaps the loudest murmurs of this character of all are heard in cases of acute dilatation in men who have previously been subjected to very laborious occupations. The following case, related to me by Dr. Wm. H. Thomson, illustrates this point. A tremendously muscular man was admitted to the hospital suffering from anasarca and all the signs of advanced valvular disease. The heart showed murmurs so loud that they were virtually heard all over the body and for that reason could not be located. The man died and the heart was found to have been hypertrophied by prolonged heavy labor and finally acutely dilated by some unusual strain.

From what has been said it is easily seen that dilatation is capable of producing murmurs as marked as endocarditis. Then when we add to these the so-called hemic murmurs and the anonomous murmurs heard under the clavicle and various other places, it becomes evident that to diagnose a cardiac murmur as due to deformity of valve segment requires not only careful examination and investigation but prolonged observation.

It would seem that the serious prognosis formerly given in all valvular cases was due to the inclusion of many cases not valvular at all. It is now generally believed that the important consideration is the integrity of the heart muscle and that when that muscle is healthy a moderate degree of leakage need not cause anxiety.

This brings us to the general topic of the estimation of the condition of the heart muscle. There is no means by which we can even hope to observe directly the heart muscle except to estimate to a degree its external contour. Whether an increase in the contour is due to thickening of the muscle itself or an overdistension of the cavities must also be a question of direct inference. In the majority of cases it will not be possible to satisfactorily demonstrate even enlargement. The estimation of the condition of the heart muscle must depend upon the influence of this condition upon the functions of the heart. Up to the point where function is affected can only be a matter of inference.

Nor is it necessary that the causes of irregularity shall be myocarditis because of the presence of valvular disease. Hence the great difficulty of prognosis in rare cases in which combined with a slight deformity of the valves there is a cardiac neurosis. The test is how well the heart does its work over a long period of time, but the problem of distinguishing between the irregularity in force and rhythm, due to disease of the muscle and that due to disturbance of the nerves, is one of the utmost importance. Up to the present time no precise rules have been laid down, and it remains, like many other things, a matter of individual judgment after all the signs and symptoms have been reviewed. These hearts should always be examined before and after a considerable amount of exercise. The sound heart will respond and be steadied by exercise while the individual with the organically weak heart would suffer from cardiac dyspnea.

A frequent cause of the discovery in young men is the impairment of the heart's action through cigarette smoking. A young man has enjoyed good health and been considered strong and well until the injudicious use of cigarettes impairs the action of the heart muscle, rendering it irritable and irregular, and intermittent in its action, The development of heart symptoms leads to an examination and there is often found a heart murmur. This is though usually functional, in other cases organic and has lasted for a long time only to be discovered when emphasized by the disorder of the heart muscle. The importance of the disease of the heart muscle as compared with the lesions giving more definite signs has been increasingly emphasized and rightly so.

The anomaly is striking, that those forms of heart disease that give marked cardiac signs are less liable to lead to sudden death than other and less conspicuous forms. Marked valvular signs may be compatible with comparative safety, while the patient showing a moderate irregularity of force and rhythm and subject at intervals to attacks of angina pectoris is really in great danger. Analogous to the degeneration of the heart muscle following physiologic hypertrophy, due to defective valves, is a premature degeneration in athletes, particularly after middle life when exercise is neglected.

The question put in our investigation is: What is the condition of the heart muscle, and what is it capable of doing? Upon the answer depends the immediate prognosis in many and varied diseases. The patient prostrated in acute infectious disease is examined with a stethoscope and his pulse is watched for impeuding loss of force. The chronic case of cardiac disease or Bright's disease is watched for breathlessness and exhaustion. Thus unconsciously physicians always examine directly the condition of the heart muscle and base their prognosis upon it. In infectious diseases degeneration of the heart muscle is uniformly present. Disease of the valves is, of course, a dangerous and irremediable condition, but what strikes terror to the heart of the student of cardiac pathology is the existence of the signs of a failure of the heart muscle. This failure occurring in the course of cardiac disease with or without valvular lesions is far more grave than the development or existence of leakage of the valves.

The name "myocarditis" though by its derivation meaning the inflammation of the heart muscle, is used to cover a much broader field than simple inflammation. It forms therefore a good topic under which to discuss the general subject of disease of the heart muscle. While the remote prognosis may depend upon the character of valve lesions, the existence of pericarditis with adhesion, or to the tendency to disturbance of the innervation of the heart, still the immediate prognosis as to recovery from any condition for the time being is influenced most strongly by the condition of the heart muscle.

SARCOMA OF THE UTERUS IN INFANCY.

As an instructive example of the tumors to be considered in and about the uterus in infancy, J. Lorthioir (*Jour. de Chir.*, August and September, 1901) reports one of sarcoma in a child 3 years old. In December, 1900, a small, fibrous mass, apparently fibroma, was removed from the cervix. In March a partial vaginal hysterectomy was done by morcellement. In June a total ablation of the stump of the uterus and appendages was done by the abdominal route, for an enormous recurrence which filled the true pelvis. Death occurred by shock. The autopsy showed involvement of the mesenteric glands. Microscopically the first tumor removed was fibrous and all the tissue ablated at the other operations was more or less sarcomatous with small, round cells.—*Med. News.*

SOCIETY REPORTS

LOUISVILLE CLINICAL SOCIETY.

Closed Prepuce.—Ewing Marshall reported this case: A baby born under my care about six o'clock a.m. seemed to be entirely sound. The bowels moved freely while he was wrapped up, before the nurse was ready to grease him. The nurse reported that he had probably passed his water when he had emptied his bowels.

Fortunately I was called late that afternoon to see the mother, as she had been unable to empty her bladder. After using the catheter upon the mother I inquired about the baby, and the nurse said that he had not urinated since morning. I examined him and found a tightly adherent prepuce completely closing the meatus; this was forcibly opened and carefully peeled back of the corona; there was a little cheesy mass under it; the mucus lining was cleansed and then greased with carbolized vaseline. The nurse was directed to strip back the prepuce every six hours and grease the parts. At my next visit I found that the nurse was not thoroughly attending to the matter, and she was more carefully directed. Since then the patient has had no further trouble. I relate this case simply to call attention to the fact that in male children we should look after the penis more carefully than we generally do. This is my first experience with a completely closed prepuce..

DISCUSSION.

Dr. W. F. Bogges.—I have frequently seen children who did not pass any urine for twenty-four hours or even longer after birth, but never attach any importance to the matter. I always look at the prepuce as soon as the baby is born to see that it is sufficiently open to allow the secretions to pass, but if no urine is voided for twenty-four or even thirty-six hours I give myself no particular concern about it. I have often seen babies who did not pass a drop of urine for thirty-six hours after birth.

Dr. J. M. Krim.—In 95 per cent. of cases there is adhesion of the prepuce to the glans penis. Particular attention should be paid to this matter and immediately after birth the prepuce should be stripped back and the adhesions broken up. It is not unusual for a child not to pass any urine for thirty-six hours after birth.

Dr. P. F. Barbour.—I endorse what Drs. Krim and Boggess have stated, that it is not unusual for children to pass urine for eighteen to twenty-four hours after birth. I believe that the baby often passes water while being born and no attention is paid to it or the circumstance is not noticed. Some children are not put to the breast for forty-eight to seventy-two hours and during this time very little urine is secreted. I think it is a bad plan not to give the child water soon after birth, because this will often prevent the development of inanition fever. I have seen cases like that described by Doctor Marshall where the prepuce was tightly adherent and the child could not pass any urine through it. I believe it is also a fact that a child passes urine into the amniotic liquor before its birth.

Dr. Ewing Marshall.—I have seen a great many cases in which there was an adherent prepuce but this is the only instance in which I have seen the meatus totally occluded or blocked so that no urine could be voided.

Another peculiarity about this child was that when it was born the penis was erect, I was hurried away from the case and did not examine the penis carefully at the time; the only thing that attracted my attention was that the organ was erect. On my next visit I examined the penis carefully and found no opening. The prepuce was easily forced back over the glans and the child had no further trouble from this source.

SYPHILIS OF THE LIVER.

Dr. Simon Flexner, of Philadelphia, says that the gummata are generally present on the surface of the liver under the peritoneum. There are three forms of syphilitic disease of the liver, viz., simple, interstitial and gummatous hepatitis. To these may be added amyloid degeneration. There has been no important improvement on Virchow's original classification. In 5,088 autopsies done at the Philadelphia Hospital there were 88 cases of syphilis of the liver. Of this number, 45 had interstitial hepatitis, 33 perihepatitis with gumma, and 7 had amyloid degeneration. In simple gummatous hepatitis ascites did not appear. Contrary to the general opinion formerly held, amyloid change might be resorbed under treatment.—*Medical Record.*

BOOK REVIEW

THE PERITONEUM: ITS HISTOLOGY AND PHYSIOLOGY.—Second edition. By Byron Robinson, B.S,, M.D., Chicago. 8vo; pp. 406—103 with 247 illustrations. Medical Book Co. Chicago, Ill..

The fact that a second edition of this work has been published within two years shows that there is a desire for knowledge concerning the histology and physiology of the peritoneum. The author commences with a brief historical sketch of pretty much every worthy who has endeavored to prove or disprove anything concerning the normal microscopical anatomy of this structure. He treats at length of the endothelial layer of the free peritoneal surface with its stigmata and stomata, the basement membrane and the several other components of the subperitoneal connective tissue. Several chapters are devoted to the lymphatics, blood-vessels and nerves, both as concerns their structure and their function. Practical directions for staining with silver and gold are frequently touched upon. The book contains valuable information, no doubt, but frequent repetitions of text and cuts render it rather tedious at times. The cuts are good, but an unnecessarily large number of the same subject are introduced. The paper and printing leave nothing to be desired. The proof-reading is at times careless, particularly in the first part of the book and when Latin quotations are attempted. In fact, if the whole work were boiled down to about one-fourth its present volume we should be able to endorse it more heartily. T.

PROLONGED MEDICATION.

Dr. A. Jacobi, of New York, was the author of this paper. He dwelt particularly on digitalis, and said that he had been accustomed to use it in small doses for long periods at a time and had noted nothing but good from such practice. His main reliance was on a good fluid or solid extract. Of the latter he would give ½ to ¾ gr. as a daily dose to an adult and this he would not hesitate to continue for months. Years of cardiac ailment should be met by years of medication. Chronic myocarditis was no contraindication. He never treats chlorosis without adding digitalis to the iron.—*Med. Record.*

PRACTICAL NOTES

TEETHING.

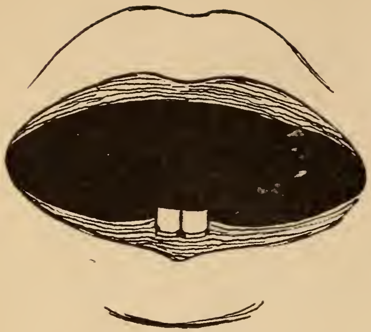
Too many of the ailments of childhood are ascribed to teething. Dentition is a natural process. It begins at birth, and the child enters the world with its temporary teeth completely formed within the jaw. There is no absolute law governing the order in which the teeth appear, but the average order for the temporary teeth is shown in the illustrations.

The appearance of the teeth may be retarded or hastened by different conditions—heredity, food, nationality and climate—all of these have an influence upon this process. The general health of a child, more than for any other reason, will influence its well-being during the period of dentition.

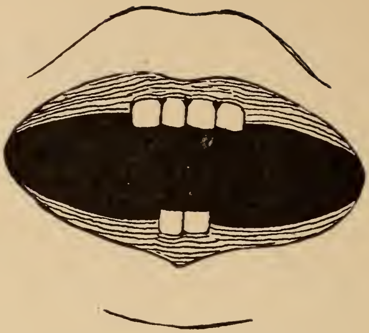
Premature teething may occur from direct causes. In rare cases children are born with one or more teeth, which can be seen in the jaw. Such an advanced state of affairs interferes seriously with nursing, for it causes great discomfort to the mother, and consequently such teeth are generally removed. This removal is more or less easy because, as a rule, the teeth in such cases are already decayed.

That teething is a perfectly natural process is a fact that too many mothers are in ignorance of. Feverishness, restlessness and disturbed sleep are the ordinary symptoms of infant derangement; these symptoms of a disturbed condition are likely to appear at any time during the two or more years when a child is "teething." It has not been proven that they have anything at all to do with dentition. On the contrary, these symptoms of illness, as well as those of a far more serious nature, are more likely to be induced by some other cause. If your child exhibits any warning symptom, send for your physician and let him ascertain the real cause of illness. Do not ascribe the child's illness to "teething" and thereby take the risk of serious and perhaps fatal illness.

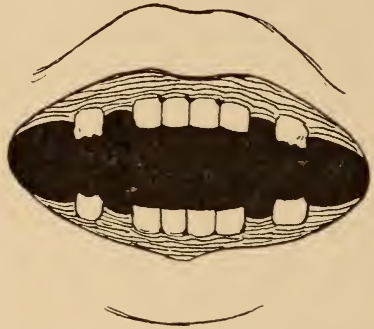
In a healthy child dentition goes on without producing symptoms of any sort. At times children may become a little fretful or cross. In the evening there may occur a slight rise



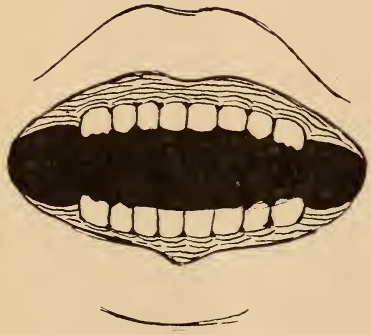
6 to 8 Months—2 Middle Lower Incisors.



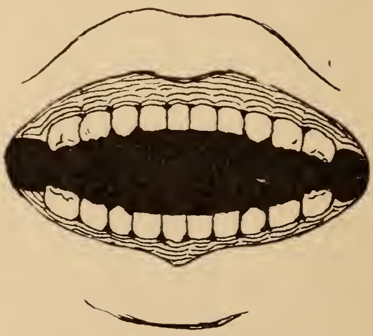
8 to 10 Months—4 Upper Incisors.



12 to 14 Months—2 Lateral Lower Incisors, and 4 Anterior Molars.



16 to 20 Months—4 Canines.



20 to 32 Months—4 Posterior Molars.

of temperature, but in most cases the teeth will appear without any of these warning symptoms.

A very false idea exists that infantile convulsions are due to teething. If a carelessly fed child has convulsions during the teething period, do not blame the teeth, but your own neglect or over-abundant attention. The same is true in cases of diarrhea. The mistaken idea that a mild diarrhea is beneficial to teething children is responsible for a large annual infant mortality. Diarrhea is never beneficial to a child under any condition, any more than constipation would be beneficial.

This complaint is always especially prevalent during the summer months. It may be due to an improper diet or to excessive heat, or to generally unhealthy conditions, but never or rarely to teething.

There can be no prescribed form of treatment for teething, none is required. A little bromide, given according to a physician's direction, will allay irritation or sleeplessness when absolutely necessary.

When a child is ill during the period of dentition, the cause of illness must be correctly ascertained. Send for your medical adviser immediately. Do not imagine that the illness is due to "teething."

Parents are too careless of the temporary teeth. They should be preserved and cared for until pushed out by the second teeth, so that the jaw cannot contract in the interval.

The first set should be carefully brushed by the mother or nurse with the softest antiseptic paste or powder. When signs of decay appear the teeth should be treated.

In this way the child grows up with sound and even teeth.

IVY POISONING.

Dr. R. L. Patterson, of Oakdale, Pa., uses an application of glyco-phenique with equal parts of water in recent cases, and with olive oil in older cases.

ABSTRACTS

THE TONSILS.

Robert Levy (*N. Y. Med. Jour.*, Oct. 12, 1901) says: The anatomy, both normal and pathological, as well as the physiology, of the faucial tonsils is still indefinitely understood. Among recent investigators, Dr. R. D. Fry, of Cleveland, after elaborate experiments and after numerous inquiries among prominent laryngologists, concludes that the "tonsil in man is a retrograde organ and has no function." On the other hand, Mangouly (*Vratch*, October 28, 1900, reported in the *N. Y. Med. Jour.*) concludes, after apparently careful experiments upon dogs, that the tonsils bear an important relation to the blood and that their integrity is an important factor in the struggle of the organisms against the invasion of germs through the mouth.

A most comprehensive article by Ullman, in the *Medical News* for January 26, 1901, also points out the important relations these structures bear to the economy, and concludes, first, that the normal tonsil has a physiological function, probably protective to the organism, but secondly that this function is frequently impaired and that in the tonsil begins the nidus for the growth and distribution of pathogenic organisms in the system, Many references might be made to authors of note, proving by both clinical and microscopic evidence the important role played by the tonsils as portals of infection, while many others, notably Labbè, in the *Presse Médicale* for August 3, 1900, have shown that the tonsils play an important part in hematopoiesis, and that the follicles of the tonsils by the extent of the epithelial surface are also a means of defence against microbian invasion. Here again, then, are numerous reasons why such diversity of opinion exists concerning the proper management of these structures.

The tonsils are subject to acute and chronic inflammation, infections, to disturbances in the character of their secretions, and to development of hypertrophic or hyperplastic changes. These pathological processes must be considered as due to both local and constitutional causes. The local causes are dependent upon certain variations from the normal in the structure of the tonsils themselves, while the constitutional causes may be due to such systemic vices as rheumatism, lymphatism, or systemic infection from absorption through the tonsillar tissue. It is extremely rare, in the opinion of the author, that the systemic causes exist alone, and therefore one is forced to the conclusion that the local cause is the more important. Consequently, the proper management of the local condition should result in the prevention of subsequent diseases of the tonsils, such as acute amygdalitis, as well as chronic amygdalitis, whether attended with hypertrophy, degeneration, or perverted secretion.

In the majority of instances, especially in adults, complete enucleation of the diseased tonsil should be performed. Whether there is simple hypertrophy or a diseased condition of the follicles unattended with hypertrophy but giving rise to well defined symptoms, nothing short of complete removal will assure one that the symptoms will not return. Amygdalotomy will not suffice. The best method for complete amygdalectomy in adults is by the galvanocaustic snare, for, by this means, the danger from secondary hemorrhage is the least, although it may even occur here.

In children amygdalotomy has its uses, and certainly its advantages, for here the tonsillar tissue is not yet all pathologic and one may by the rapid use of the guillotine remove the tonsil so that a decided concavity marks its former situation. A certain amount of tonsil structure remains to perform a possible function in the growing economy at the same time that the child is relieved of the symptoms for which the operation was undertaken. Only in those cases in children in which recurrence after a former amygdalotomy has taken place, or in which there is a diseased condition without hypertrophy, such as is seen in adults,should the more difficult and radical procedure be undertaken.

CONGENITAL HEART DISEASE.

J. L. Morse (*Archives of Pediatrics*, Oct. 1901) writes in conclusion as follows:

The points brought out by the study of thirty-two cases of congenital heart disease which seem to me of most interest are:

1. The considerable proportion of cases in which the cardiac lesion was discovered during a routine physical examination, there having been no symptoms referable to the heart.

2. The length of time which the condition may exist without the development of any symptoms, several cases having shown no symptoms at three and four years of age.

3. The comparative mildness of the symptoms in cases of patent foramen ovale.

4. The recovery from lesions which from physical examination were apparently the same as those in cases which resulted in chronic invalidism or death.

AGGLUTINATION OF PSEUDODIPHTHERIA BACILLUS BY ANTIDIPHTHERIA-SERUM.

Scientific investigations have recently tended to confirm the opinion that the so-called pseudodiphtheria bacillus and the Klebs-Loeffler organisms are closely related species, and that possibly under certain conditions they may be transferable forms. This has been gathered from many similarities in their characteristics. The subject is of vital importance in its relation to the bacteriological diagnosis of diphtheria. Ch. Lesieur (*Comptes Soc.de Biologie*, Aug. 1901) reports the study of seventy varieties of diphtheria and pseudodiphtheria bacilli from the standpoint of agglutination by antidiphtheritic serum. His work shows that this property is an inconstant characteristic of the true Klebs-Loeffler bacillus and is in no way related to its virulence. Furthermore, that certain varieties of this organism can be agglutinated by the serum of horses immunized by cultures while they do not react to the serum of horses immunized by toxins. The pseudobacillus conducts itself toward these sera precisely as does the true organism and by this means cannot be differentiated from it. This fact constitutes a new presumption in favor of the identity of certain species of pseudodiphtheria bacilli and the true diphtheria organism.—*Med. News*

EXTUBATION BY MEANS OF THE ELECTRO-MAGNET.

Of late years the magnet has played a notable part in the removal of foreign bodies, especially from the eye. Recently, at a meeting of the Lyons Society of the Medical Sciences (*Lyon médical*, July 14th), M. Collet proposed the use of the electromagnet for extubation, a procedure often calling for no little skill. A portable storage battery and a slender magnet suitably curved, says M. Collet, are the only appliances needed, and with them anybody can remove a laryngeal tube instantly and that is a great object in cases of sudden obstruction of the tube.—Editorial, *N. Y. Med. Jour.*, August 3, 1901.

[The great superiority of the rubber tubes is now admitted; these, of course, cannot be extracted by a magnet.—Ed].

LECITHIN IN TUBERCULOSIS.

The efficacy of lecithin in stimulating nutritive exchange has been scientifically demonstrated by Danilewski and Soromo, and later by Desgrez and Zaky. Gilbert and Fournier have shown that the administration of lecithin produces an increase of weight in cases of tuberculosis, neurasthenia and diabetes. The effects of lecithin in cases of tuberculosis are more satisfactorily shown by H. Claude and A. Zaky (*La Presse Méd.*, Sept. 28, 1901), who, in their experimental and clinical studies gave special attention to urinalysis, not neglecting, however, to observe carefully the changes in body weight and in the general physical condition of the subjects of their experiments. They find that lecithin causes in tuberculous subjects a rapid modification in metabolism, which expresses itself in an immediate diminution in phosphorus elimination, and by a tendency to progressive elevation of the coefficient of nitrogen utilization. In subjects not in the last stages of chronic tuberculosis and not suffering from an extremely acute attack of the disease, the administration of lecithin produces promptly an increase of weight, stimulation of appetite, amelioration of the general condition. How far local lesions are affected is not shown, but in the opinion of the authors such lesions are modified, as indicated by changes in physical signs. Lecithin is strongly recommended by these writers, if not as a specific, at least as an important adjuvant to other forms of treatment.—*Medical News.*

A CASE OF SPURIOUS GENERALIZED VACCINIA.

J. H. Huddleston (*Med. News*, Sept. 7, 1901) reports this case: A boy, H. J., 11 months old, was vaccinated with Health Department virus and the vaccination ran a normal successful course. On the third day a few "spots" appeared on the skin; on the fifth day Dr. Fielder saw the case and noted an eruption on the face, neck, arms, legs and trunk, especially across the lumbar region; it consisted of small, discrete vesicles on a base of papular or erythematous character. The vesicles were 1/16 to 1/8 inch in diameter, high and full. There was no eruption in the mouth. On the sixth day the case was seen by several physicians in consultation and by them it was called vaccinia; it was also seen by some diagnosticians of the Board of Health and by them was called varicella. Some of the lymph was collected on that day. On the eighth day many of the vesicles were pustules. No umbilication was seen. The lesions kept on appearing a few at a time until the twenty-second day. There were three other children in the family, none of whom had had varicella, and none developed it either before or after the operation. Four children were inoculated with the lymph taken from the vesicles and neither a vaccine pustule nor varicella followed. The eruption was, I think, a vesicular eruption, which, exactly like a roseola or an urticaria, sometimes follows vaccination just as all three sometimes follow antitoxin or drug administration. An added reason for this conclusion is that the eruptions of the roseola type may come on in the first three days, vaccinia usually not. The resemblance may be extremely close and the final test in any case is inoculation.

WESTERN MEDICAL SCHOOLS.

It is reported that the Cincinnati medical schools show a falling off in attendance this session. The cause is alleged to be the raising by the State of the standard of preliminary education. The medical colleges of Louisville, Ky., and those of Indiana and Illinois are said to be profiting by this state of affairs. It behooves the medical profession of those States to take such action as will prevent their suffering from an irruption of students and physicians whose education is insufficient to admit them to practise in Ohio.

The medical colleges in that State, especially those of Cincinnati, which have always drawn largely from Kentucky and other Southern States, will suffer to some extent; but the profession of Ohio will be greatly the gainer by the elevation of the standard of education of the new generation of physicians. The general profession has long thought that there are too many schools in Ohio and will not weep very copiously if some cease to exist. The legitimate and desirable outcome of these conditions should be the consolidation of schools in those cities which have a plurality. Members of faculties should consider this seriously. Medicine of today regards more highly the physician of the future than him of the present. Progress should be freely permitted. It will come in spite of opposition, and in that case some cannot escape being hurt, Those engaged in medical education, if they have the interests of the student really and chiefly at heart, can readily arrange for combined effort if they will. By so doing they will earn the respect and the plaudits of the profession.

It is to be regretted that some colleges in the State,by offering inadequately low fees, and facilities in proportion, are at present attracting the largest number of students. Those responsible for their existence should fully understand that the profession at large is far from being unaware of the real facts. Voluntary effort toward better conduct should by all all means precede, or rather replace, compulsory reform.—*Cleveland Journal of Medicine.*

THE DIAZO REACTION IN TYPHOID FEVER.

M. E. Sacquepee (*Archives Générales de Médecine*, August, 1901) has carefully studied the diazo reaction in twenty-four cases of typhoid fever, throughout the entire course of the disease. A number of tables are given showing the relation of the diazo reaction to the bodily temperature. The writer comes to the conclusion that the diazo reaction is nearly constant in typhoid fever, appearing commonly seven days before the highest temperature is reached. The distinctness of the reaction follows the temperature curve. Commonly the disappearance of the reaction is followed by a fall in temperature if there are no complications, If it disappears abruptly and early it is a bad prognostic sign; likewise its persistence after the temperature has fallen,often pointing to a complication. —*Medicine*.

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